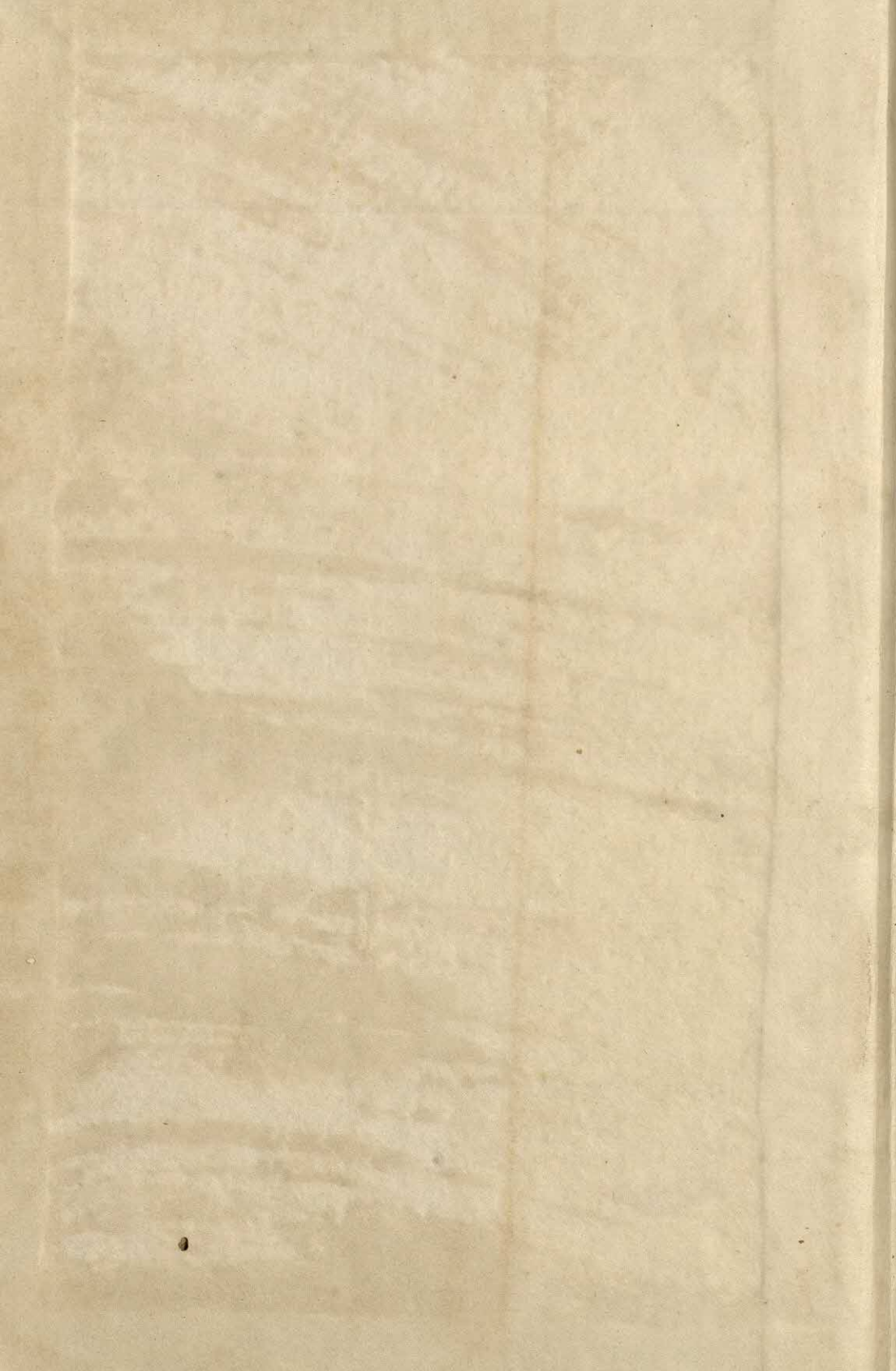


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Improving the Teaching of Reading

Emerald V. Dechant

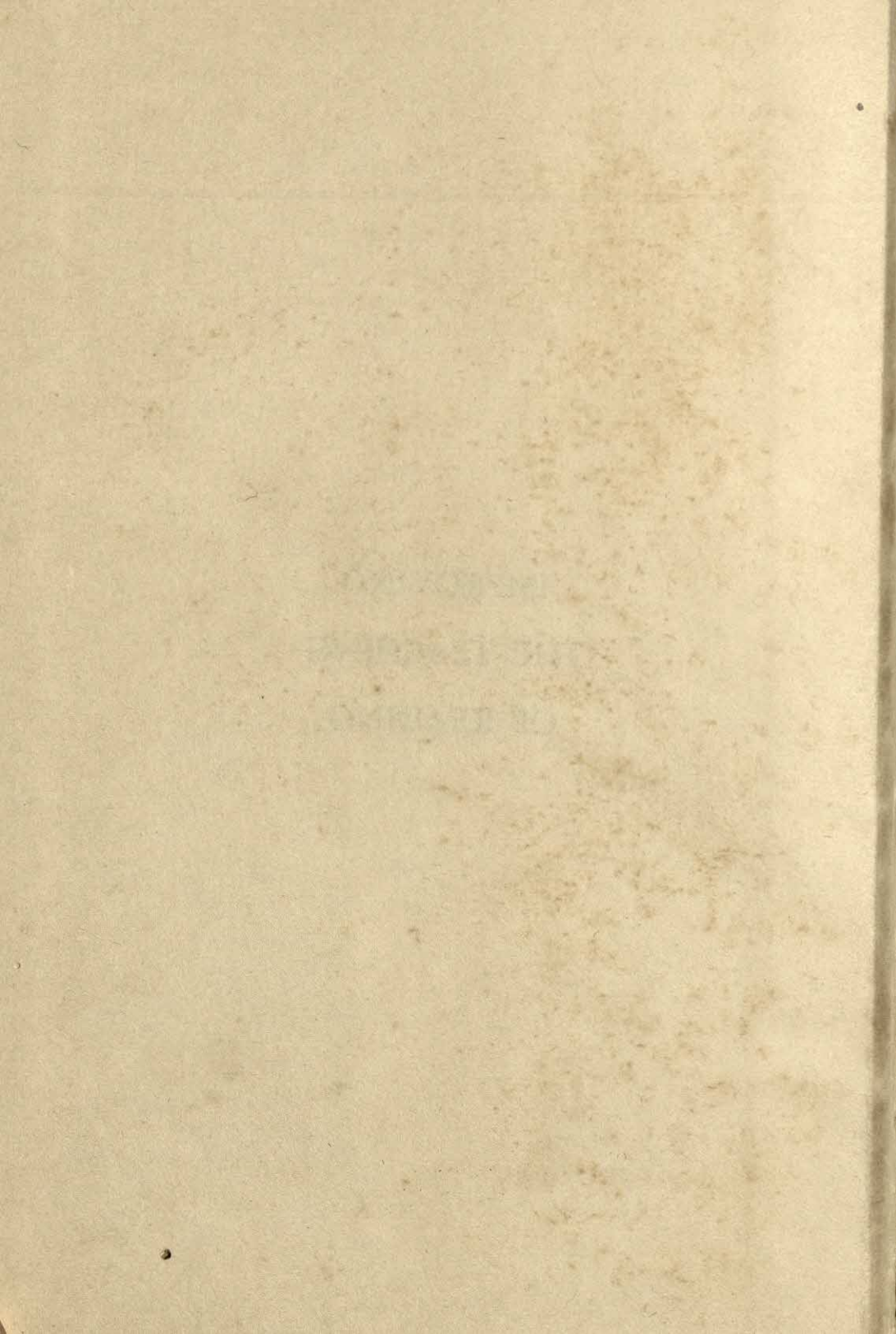




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IMPROVING
THE TEACHING
OF READING



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IMPROVING ~~65-63~~
THE TEACHING
OF READING



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by Emerald V. Dechant

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Part One



READING — AN OVERVIEW

The Latins had a phrase, "*tot capita, tot sententiae*," that perhaps best describes our predicament when we seek to define reading. There are just about as many descriptions or definitions of reading as there are "reading experts." Let us then reserve our definition of reading until later and list here eight characteristics of reading:

1. *Reading is a sensory process*

Reading requires the use of the senses, especially vision. The reader must react visually to the graphic symbols. The symbols themselves must be legible, the eyes must see clearly and singly, and the light must be adequate.

2. *Reading is a perceptual process*

Reading occurs when meaning is brought to graphic stimuli. It is a progressive apprehension of the meanings and ideas represented by a sequence of words. It includes seeing the word, recognition of the word, awareness of the word's meaning, and relating the word to its context. This is perception in its fullest sense.

3. *Reading is a response*

Reading is a system of responses made to some graphic stimuli. These include the vocal and/or subvocal muscular responses made at the sight of the word, the eye movements during reading, physical adaptations to the reading act such as postural changes, the critical and evaluative responses to what is being read, the emotional involvement of the reader, and meaningful reactions to the words.

4. *Reading is a learned response*

Reading is a response that must be learned by the child and is under control of the mechanisms of motivation and reinforcement.

5. *Reading is a developmental task*

Developmental tasks have one basic characteristic: the child's readiness for them depends on the child's general development. Reading is a difficult

task, and there is a most teachable moment for beginning reading and for each of the specific skills in reading. The child's level of achievement in reading depends on his over-all growth and development.

6. *Reading can be an interest*

Reading may become an interest or a goal in its own right. It then may motivate other activity.

7. *Reading is a learning process*

Reading may become one of the chief media for learning. The child can use reading to acquire knowledge and to change his own attitudes, ideals, and aspirations. Genuine reading involves integration and promotes the development of the reader. It opens up to him a world of ideas, takes him to distant lands, and lets him walk side by side with the great sages of time.

8. *Reading is communication*

Reading is an active process. Communication from writer to reader occurs only if the reader can take meaning to the printed page. Without the reader, communication via the printed page is impossible.

Part One consists of two chapters. Chapter 1, the "Introduction," identifies the general goals of reading and the specific goals of this book. Chapter 2, entitled "The Nature of the Reading Process," deals primarily with the sensory and perceptual nature of the reading process. It emphasizes that reading is:

... a perfect interaction between ocular functions and interpretive factors. The reader coordinates his eyes as he moves them along the lines of print in a left-to-right fashion, stopping to perceive words or word-parts which he continuously adds up into thought units. He interprets what he reads in light of his background, associates it with past experience, and projects beyond it in terms of ideas, judgments, applications, and conclusions.*

* Stanford E. Taylor, Helen Frackenpohl, and James L. Pettee, *Grade Level Norms for the Components of the Fundamental Reading Skill* (Huntington, New York: Educational Developmental Laboratories, Inc.), Bulletin No. 3, 1960, p. 1. Reprinted by permission.

1 INTRODUCTION

In this introduction we should like to identify the general goals of reading instruction and the particular goals of this book. Goals of teaching reading have changed constantly through the years, and being able to identify them seems to be a first essential for an effective reading program.

In 1927 Young (pp. 1-2),¹⁸ for example, included the following among the objectives of reading instruction: increase in vocabulary, eye span, and comprehension; promotion of the desire to read many books; development of rhythmic eye movements; reduction of regressions and fixations; rapid reading of easy material; intense concentration for short periods; and elimination of vocalization.

In all fairness we must admit that some of these goals have never been fully attained. For example, we have not yet developed a permanent interest in reading in many pupils. There also is still room for much improvement in reading achievement generally. Perhaps 25 per cent of high school and college students are not reading up to their ability. An even larger percentage of students may not be reading at grade level,¹⁶ and the most seriously retarded youngsters in reading frequently are those with high intelligence. A few years ago the superintendent of schools of New York City reported that 10,000 seventh-graders could not read third-grade textbooks and 67,067 of 172,000 junior high school students were two or more years retarded in reading ability.

But, as significant as these inadequacies is the fact that Young's statement of goals is inadequate today. Our reading goals have been broadened and our emphasis has shifted.

Smith¹⁴ recently outlined reading development over the last fifty or sixty years. Her analysis will help us to identify this broadening and shifting of goals.

The 1910-1920 decade initiated the trend away from the centuries-old emphasis on the physiology of reading and on oral reading. Reading was viewed more from a psychological perspective. The advantages of silent reading were emphasized particularly in studies by Buswell and Judd.^{3, 10} In 1917 Thorndike¹⁵ had already clearly delineated the differences between simply saying the words to oneself as one read and understanding what was being read. He compared the reading of a paragraph to the process of solving a problem.

The 1920-1930 decade continued the emphasis on silent reading and comprehension and stressed individual differences and remedial reading. With increased emphasis on individual differences came a greater demand for psychological testing and statistical and experimental methods were applied to the analysis of the child's behavior.

The emphasis away from oral reading and toward silent reading was perhaps too great. In fact, in the 1950's, some schools were severely criticized (perhaps rightfully so) because they had abandoned formal instructions in oral reading.¹⁷ Oral reading was taught, but it never again occupied the same eminent place as prior to the 1920's.

Gates' *The Improvement of Reading*⁷ developed a trend in diagnosis and remediation. Reading retardation was viewed as a complex process explainable only by a group or syndrome of related causes or factors.

The 1930-1940 period was not noted for its innovations. It was rather a period of consolidation. The concept of reading readiness became more entrenched and broadened. Thus, readiness was extended to include readiness for high school, college and adult reading. More attention was focused on remedial reading and on reading materials. The quantity of books and supplementary reading materials increased tremendously.

In 1940 much of the world was at war. With it came the stark reality that many youths could not read sufficiently well to understand simple Army literature. Reading was taught to these men.

The 1940's also were accompanied by emphasis on reading in the content areas.

In the early 1950's the trend which began in the 1940's continued. There was perhaps a greater realization by all teachers that they had a responsibility in reading.

Then in 1957 with the launching of the Russian satellite came a new era in reading. Suddenly, national shortcomings were attributed to so-called classroom failures, especially reading failures. Public education became the whipping boy for loss of pride on the international scene.

Unfortunately, the cause so readily found by so many was rarely the true cause and the solutions advanced for educational inadequacies in general, and reading in particular, if indeed there were any, were frequently neither realistic nor satisfactory. Little has been gained by going back to the "good old days." The words of Will Rogers come to mind: "Things ain't what they used to be, and probably never was."

Crowded classrooms and teacher shortages are no less causes of educational inadequacies than is teacher ineffectiveness, and yet, teachers and teaching methods bore the brunt of public attack.

Criticism is essential to success in education. Some criticism stimulates action, arouses interest, squelches apathy, and restores balance. Unfortunately, not all criticism directed at the schools and at teachers of reading has been of this kind. Teachers of reading were forced to contend with the nagging, carping type of criticism that like a perpetual hail storm unleashes an unmerciful beating. This type quite frequently either stifles all growth and development or leads to meagre growth in an atmosphere of bitterness and discontent. A second type of criticism is strongly emotional and begets only anger and hate. The person criticized feels only the pangs of unjust criticism and the critic is out to destroy and eradicate. A third type of criticism is insulting and haughty. The critic uses it for self-enhancement. It is "chicken pecking" by a self-appointed leader. A fourth type of criticism is dishonest, Machiavellian, and aims at the attainment of a sadistic goal. It is characterized by straw men, straw issues, outright lies, digs, and snide remarks.*

Teachers always have had to bear the brunt of criticism for inadequacies in reading instruction. Cribbin^{5*} has so ably described the teacher's plight that we quote him directly. He writes:

"All the king's horses
And all the king's men
Couldn't put Humpty Dumpty
Together again.

But had they been teachers,
The critics and screechers
Would have demanded with ire
That he be made whole and entire."

Although some few teachers may indeed take off in September, cover a predetermined amount of material, and land in June only to find that one by one students have been lost, the greatest number of teachers is doing an excellent job.

Although some few teachers have found a scapegoat for their own inadequacy (It is not uncommon for such a teacher to say: "The child is a product of his environment"; "He never had a chance"; "He is emotionally disturbed"; "His parents are culturally backward"; "Teachers aren't paid enough"; or "Parents aren't strict enough with their children";), the average teacher neither has sought scapegoats nor has he given up the ideals of his profession. He has maintained that precarious inner balance required in teaching. He believes in an ideal goal, but is

* For a discussion of these misuses of criticism see Hanson.⁸

** Reprinted from the October, 1959 issue of *Education*. Copyright © 1959 by the Bobbs-Merrill Co., Inc., Indianapolis, Indiana.

compassionate toward those who miss the mark; he respects excellence, even glories in it, but at the same time respects struggle and understands failure (p. 78).⁴

The question arises, "Where do we go now? What are our goals?" Perhaps, our goals today are best described as the goals of a developmental reading program. The basic aims of such a program are:

- (1) The developmental program coordinates reading with the pupil's other communicative experiences.
- (2) The developmental program is a continuous program extending through the elementary and secondary grades and college. It provides instruction and guidance in basic reading skills, both silent and oral, in content-area reading, in study skills, and in recreational-reading.
- (3) The developmental program is a flexible program that is adjusted at each level of advancement to the wide variations in pupil characteristics, abilities, and reading needs. Readiness for reading as a concept is applied at all age and grade levels.
- (4) The developmental program has a stimulating classroom setting in which attitudes and interests favorable to the development of habitual reading are developed effectively.
- (5) The developmental program provides plentiful reading materials, basal readers, experience charts, films, film readers, etc. that cover a wide range of difficulty and interest.
- (6) The developmental program provides for continuous measurement and evaluation of the effectiveness of the program as a whole and of its more specific aspects.
- (7) The developmental program provides for continuous identification and immediate remediation of deficiencies and difficulties encountered by any pupil.
- (8) The developmental program includes differentiated instruction to meet the needs of each child, but it does not ignore the commonality of needs, interests, and abilities among children.
- (9) The developmental program looks upon reading as a perceptual process rather than as a subject. Reading is taught on all levels in all subject areas by all teachers.
- (10) The developmental program emphasizes reading for understanding and thinking and aims to develop critical skills and flexibility in comprehension and rate in accordance with the pupil's abilities and purposes and the difficulty levels of the materials.
- (11) The developmental program allows each pupil to progress at his own success rate to his maximum capacity.
- (12) The developmental program seeks to develop reading maturity. A mature reader reads all kinds of materials. He perceives words quickly and accurately and reacts with correct meaning. He reads both for information and recreation.
- (13) The developmental program, based on sequential instruction in the basic skills and upon the need for differentiated instruction, gives equal emphasis to the sight and phonic methods, to group and individualized instruction.*

* Adapted from Henry P. Smith and Emerald V. Dechant, *Psychology in Teaching Reading*, © 1962, Prentice-Hall, Inc., pp. 379-380. Reprinted by permission.

Certainly, the goals are formidable. How to achieve these goals and how best to proceed so as to help us come closer to their attainment is difficult to outline.

In this book we hope to describe the nature of the reading process and then to deal with this process in the various stages of reading development. Thus, much emphasis will be given to reading readiness, to the problems associated with "learning to read," and to "reading for learning."

Since we feel that the teaching of reading functions best when it is one phase of the total communicative process, the book will emphasize the early language experiences of the child. It will attempt to relate the psychology of reading to the every-day problems facing the teacher in the classroom. It will emphasize phonics instruction more than most books because many teachers seem deficient in this area.

A study by Aaron,¹ involving 293 students * enrolled in an introductory reading course, suggests that many teachers and prospective teachers need to acquire in college even the most basic phonic generalizations. 213 students, or 73 per cent, got less than forty items of a sixty-item phonic test correct. The mean score of correct answers was 34. Teachers with experience generally scored better than those without experience, but teachers at the primary level did not score better than teachers at other grade levels. The items measured ability in dealing with:

1. Vowels in open syllables;
2. Vowels in closed syllables;
3. Silent *e* preceded by a long vowel (mete);
4. Long vowel before a silent second vowel (boat);
5. *C* before *e*, *i*, or *y*;
6. *G* before *e*, *i*, or *y*;
7. Vowels followed by *r*; and
8. The vowel *a* followed by *l*.

Ramsey,¹² after studying reading manuals to determine what phonic skills the teacher of reading needed, developed a test to measure the teacher's competencies in these. He then administered the *Test of Word Recognition Skills* to 236 students from five teacher-education colleges. All of the students were planning to become elementary teachers and had not yet taken the first course in methods of teaching reading.

The students knew their consonant sounds, but were weak in vowels, in the differences between short and long vowels, in diphthongs, and in

* The composition of the group was: 189 without teaching experience; 42 with 1-5 years of experience; 24 with 6-10 years; and 38 with 10 or more years experience.

verbalizing principles or rules governing phonic and letter relationships.

Austin and her associates² also found that many classroom teachers are not adequately prepared to teach the skills required for successful reading.

It is practically impossible to discuss in detail within a few hundred pages all the phases of a complete reading program and this book does not propose to do so. Rather, we have concentrated on the answers to a few basic questions: *What is reading?* (Chapters 2 and 5); *Who is the learner or whom must we teach?* (Chapters 3 and 4); *What is to be learned or what must we teach?* (Chapters 6, 7, 10, 11, 12, and 14); *How does the pupil learn to read?* (Chapters 8 and 9); and *What materials should the teacher use in teaching reading?* (Chapter 14).

The final chapter of the book seeks to place the teaching of reading in its proper theoretical context.

In attempting to answer these questions, we have divided the book into the following six parts:

Part One	READING—AN OVERVIEW
	Chapter 1 Introduction
	Chapter 2 The Nature of the Reading Process
Part Two	THE NATURE OF THE LEARNER
	Chapter 3 The Learner
	Chapter 4 The Learner—Continued
Part Three	DEVELOPING READINESS FOR READING
	Chapter 5 Reading—A Language Experience
	Chapter 6 Developing Language Readiness
	Chapter 7 Developing Reading Readiness
Part Four	LEARNING TO READ
	Chapter 8 Identification and Association
	Chapter 9 Introducing the Elementary Reading Program
	Chapter 10 Introducing the Pupil to Phonetic Analysis
	Chapter 11 Advancing the Pupil's Phonic Skills
Part Five	ADVANCING THE PUPIL'S READING SKILLS
	Chapter 12 Developing a Meaningful Vocabulary
	Chapter 13 Advancing the Pupil's Comprehension Skills
	Chapter 14 Materials for Teaching
Part Six	THEORY AND PRACTICE IN TEACHING
	Chapter 15 Understanding the Reading-Learning Process

This book is a sequel to *Psychology in Teaching Reading*.¹³ There the primary concern was with the identification of the basic psychological

principles upon which reading method is founded. Here we are concerned more with reading method and the actual teaching of reading. Thus, the book is written first and foremost for the practitioner or the teacher in-service. Our first concern has been the problems of the teacher in the classroom. Nevertheless, we hope that the book will be of genuine value to the remedial teacher, the reading specialist, and the reading supervisor. We hope that it meets the needs of those students preparing to become teachers, especially those who have had a basic preparation in reading; and we also hope that administrators and parents will find it helpful in obtaining a better understanding of the reading process.

We have made every attempt to relate psychological theory and research to practice. Sometimes, the results are rather frustrating, but this should not keep us either from theorizing and engaging in research or from making applications.

William James (pp. 7-11) ⁹ noted in 1899 that psychology narrows the path for experiment and trial. It lets us know that certain methods are wrong. It directs our activity to certain goals. But psychology rarely points to *one* method of instruction and certifies that it is the best. Many methods may agree with basic psychological principles. Theory rarely provides definite programs and methods of instruction for immediate classroom use. It takes an intermediary inventive mind, using its originality, to make the necessary applications. As James pointed out, the science of logic never made a man reason rightly, the science of ethics never made a man behave rightly, and the science of psychology does not necessarily lead to the art of fruitful teaching.

The transition from what we know as individuals to what we do is always a great leap. Perhaps an even greater transition exists between what researchers, as a group, have learned and the individual teacher's practices in the classroom. Durrell ⁶ notes that the challenge facing teachers today is the improvement of classroom practice in the light of present knowledge. This is particularly true in reading where research has been above the ordinary. We have evidence ¹¹ that much reading instruction in our schools is not based either upon the theories expounded in teacher-training institutions or upon research findings.

These are genuine problems facing the profession. Is there a solution to them? Durrell suggests that perhaps the greatest needs are for an improvement in teacher education, both preservice and in-service, and for the production of new instructional materials. We hope that this book will in some small way contribute to the first of these needs—improvement through in-service education.

2 THE NATURE OF THE READING PROCESS

In the introduction to Part One of this book, we viewed eight different aspects of reading. One writer (p. 2) ⁸ has described reading as a process, as a form of thinking, as real experience, as a vicarious experience, and as a tool subject.

As a process, reading involves visual discrimination, independent identification of words, rhythmic progression along a line of print, accuracy in the return sweep of the eyes, and adjustment of rate.

Reading also is thinking. The good reader thinks with the writer. And, because his experiences are different from those of the writer, he frequently thinks beyond or differently from the writer. One has only to read or listen to the varied interpretations of the Constitution of the United States, of the Bible, or of a newspaper editorial to realize that even good readers obtain different understandings from the same reading experience.

As thinking, reading involves a whole complex of skills and abilities. Thorndike (p. 331) ³⁰ suggests that the reading of a paragraph involves the same sort of organization and analysis as does thinking. It includes learning, reflection, judgment, analysis, synthesis, problem-solving behavior, selection, inference, organization, comparison of data, determination of relationships, and critical evaluation of what is being read.¹¹ It includes attention, association, abstraction, generalization, comprehension, concentration, and deduction.

Reading is also real experience. It is as much a real experience as is thinking, speaking, fishing, or walking. We read with our eyes, our muscles, and our emotions.

Reading also commonly provides us vicarious experience. Through it, for example, we can identify with the real and imaginary persons of literature.

Finally, reading is a means for learning. Without the ability to com-

prehend meaning, written or printed passages escape understanding. Literature is accessible to the reader only if he can understand the words on the printed page. Words frequently are the only gateways to knowledge. Words are the tools for thinking. They contain "the distilled essence of a thousand experiences (p. 63)." ²⁵ Without words ideas could be passed on to others only through awkward noises and bodily movements.

Reading is far more than recognition of the graphic symbols. It is much more than the mere ability to pronounce the words on the printed page; it is even more than the gaining of meaning from printed materials. The reader is stimulated by the writer's words, but in turn vests these words with his own meaning. "Reading typically is the bringing of meaning to rather than the gaining of meaning *from* the printed page (p. 22)." ^{* 24} Horn ¹⁶ points out that the author

. . . does not really convey ideas to the reader; he merely stimulates him to construct them out of his own experience. If the concept is . . . new to the reader, its construction more nearly approaches problem solving than simple association. †

And yet, it is not enough to put our own stamp of meaning on the words. Langman (p. 19) ¹⁸ notes that to read is to comprehend the meaning of visually presented word sequences; that the reader must follow the thought of the *writer* (p. 23). ¹⁸ Thus, the reader may and even must gain meaning from the printed page. This occurs when the writer's symbols stimulate the reader to combine or reconstruct his own experiences in a novel way.

Word-calling without understanding is not reading. Reading always involves the arousal of meaning in response to symbols, and sometimes it is necessary to select one specific meaning from numerous possible meanings (p. 8). ⁴

In speech and writing, this latter aspect becomes especially important. The writer may want to stimulate the reader to arrive at a very particular meaning. Thus, instead of using the general word "little" he may choose any of the following: small, minute, microscopic, puny, tiny, petty, dwarfed, stunted, diminutive, Liliputian, short, or miniature. The reader must be able to appreciate the particular nuances of meaning if he is to interpret the message correctly.

Gray, ¹³ discussing the dimensions of the reading process, suggested that these include recognition, understanding, reaction, and integration. Shaw ²³ noted that reading is the process of seeing or perceiving independent items, of observing and assimilating their interrelationships,

* Henry P. Smith and Emerald V. Dechant, *Psychology in Teaching Reading*. © 1961. Prentice-Hall, Inc., p. 22. Reprinted by permission.

† Ernest Horn, *Methods of Instruction in the Social Studies*. © 1937. (New York: Charles Scribner's Sons). Reprinted by permission.

and of integrating or grouping them into main ideas. Hildreth (p. 72)¹⁵ pointed out:

Reading requires inference, weighing the relative importance of ideas and meanings, and seeing the relationships among them; it is a process of forming tentative judgements, then verifying and checking guesses. To solve the problems in a passage the reader must be continuously in an alert, anticipatory frame of mind, suspending judgment, correcting and confirming his guesses as he goes along.*

Obviously, reading involves a twofold process. There are the mechanical processes involved in bringing the stimuli to the brain, and there are the mental processes involved in interpreting the stimuli after they get to the brain. When the light rays from the printed page hit the retinal cells of the eyes, signals are sent along the optic nerve to the visual centers of the brain. This is not yet reading. The mind must function in the process, the signals must be interpreted, and the reader must give significance to what he reads. He must bring *meaning* to the graphic symbol. And, as we shall see later, meaning depends to a great degree upon the reader's ability to recreate those experiences for which the symbol stands. The critical element in reading often is not what is on the page, but, rather, what the graphic symbol signifies to the reader (p. 61).²⁵ *Reading thus is the process of giving the significance intended by the writer to the graphic symbols by relating them to one's own fund of experience.*

Reading—A Sensory Process †

Reading begins as a sensory process. Sensation is the first occurrence in all perception. The reader reacts visually (in the case of Braille, kinesthetically) to the graphic symbols.

VISUAL READINESS

The child must have acquired certain visual skills before he is ready for reading. He must be able to focus at distances of 20 inches or less. He must have acquired some skill in depth perception and in binocular coordination. He must be able to center and to change fixation at will. And he must see clearly, singly, and for sustained periods.

Children are born farsighted. At birth, the eye is only about one-third of its adult size. This prevents adequate focus of the image of near objects on the retina. As the eyeball lengthens, farsightedness decreases, and

* Gertrude Hildreth, *Teaching Reading*. © 1958, Holt, Rinehart and Winston, Inc., New York. Reprinted by permission.

† See Smith and Dechant, *Psychology in Teaching Reading* (pp. 120-135, 225-226).²⁵

the child can adapt to the demands of near vision. Children generally achieve 20/20 vision at about five or six years of age. Unfortunately almost immediately deterioration sets in, and by seventeen nearly 40 per cent cannot demonstrate 20/20 acuity in both right and left eyes.¹⁹ Figure 2-1 illustrates the relationship of near and far vision to reading.

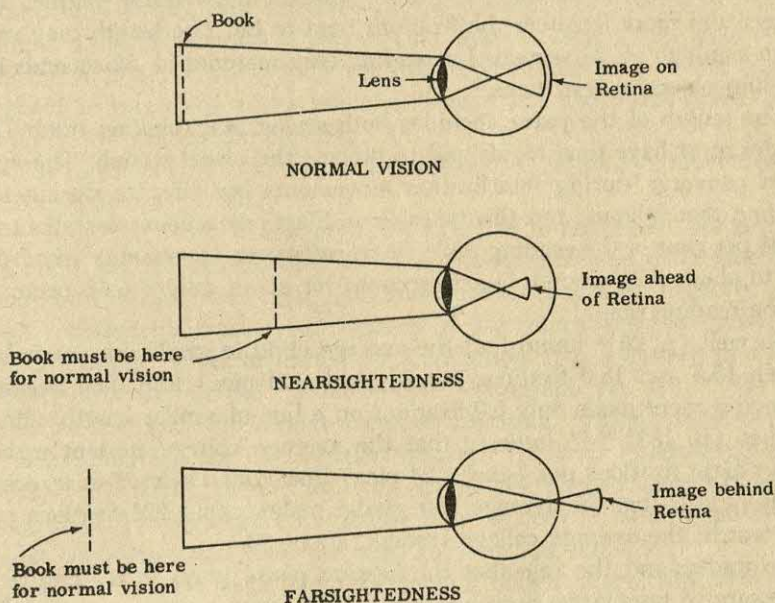


Figure 2-1. Vision and Reading

THE EYE MOVEMENTS IN READING

Much of our knowledge of how the eyes react during reading has come from the early work of Javal, Buswell, and Dearborn. Javal was the first to report on the nature of eye movement during reading. In reading the eyes do not make a continuous sweep across the page. They move in quick, short, saccadic movements with pauses interspersed. Eye movements are characterized by fixations, interfixation movements, regressions or refixations, and return sweeps. The time elements in reading are two: fixation time and movement time.

A *fixation*^{*} is the stop that the eye makes so that it can react to the

^{*} Photographs of eye movements record the approximate center of the field of vision.³¹ This "fixation field" is usually termed the point of fixation. When "fixating" on this point, the reader normally sees and recognizes also a part of the peripheral visual field.

graphic stimuli. It is the pause for reading. During fixations the intake process is suspended and the inner process of reading occurs. The length (in terms of words) and frequency of the fixation vary with the difficulty of the reading material, with the reader's facility in word recognition, with his vocabulary level, with his familiarity with the content, with his purpose, with his ability to assimilate ideas, and with the format of the printed page. For example, the more difficult the reading matter, the longer and more frequent the fixations tend to be. The length may vary from as much as .22 seconds for reading easy material to .32 seconds for reading objective test items.³³

The length of the pause includes both seeing and thinking time. The reader must have time to see and to process the visual stimuli. The eyes must converge during interfixation movements but diverge during the fixation that follows, and this takes time. Fixations account for about 92 to 94 per cent of the reading time; *interfixation eye movements* take from .01 to about .023 seconds³³ and account for about only 6 to 8 per cent of the reading time.

Buswell (p. 26)⁵ found that the average child in grade one made between 15.5 and 18.6 fixations per 3½-inch (21-pica) line. The average college student made only 5.9 fixations on a line of similar length. Other studies (p. 133)^{26, 34} indicate that the average college student makes about eight fixations per 4-inch (24-pica) line. And Taylor³⁰ in a recent study reports that the average first grader makes about 224 fixations per 100 words; the average college student, about 90.

To understand the role that the fixation pause plays in reading it is necessary to familiarize ourselves with three terms, namely, visual field, perception span, and recognition span. The visual field generally consists of an horizontal arc of about 180 degrees and a vertical arc of about 60 degrees. It includes peripheral and foveal vision (spot of clearest vision) as well as depth in vision.

The perception span or the visual span is the amount (usually in terms of numbers, letters, or words) that is *seen* in a single fixation. This is measured by a tachistoscopic exposure and usually is larger than the amount seen in a single fixation in normal reading.

The recognition span is the amount that is *seen and organized* during a single fixation. It is the number of words that are recognized and understood during a single fixation. The size of the recognition span is obtained by dividing the number of words read by the number of fixations made while reading.

Thought-unit reading sometimes is wrongly identified with the concept of phrase seeing or with the suggestion that it is possible or even common to read three or four words per fixation (p. 17).²⁹ Even though a child

reads in thought units, he rarely comprehends more than one word per fixation.

A recent study²⁹ in which the writer played a small role points this out rather forcefully. Taylor, Frackenpohl, and Pettee, using the Reading Eye Camera, analyzed the eye characteristics of 12,143 subjects from grades one through college. The subjects were of average socioeconomic status, and 90 per cent attended public schools. They resided in 19 different states. They read selections that were at their grade level of difficulty. Whenever the pupil's comprehension score was 60 per cent or below, he was given a new selection to read and was tested again. Table I (p. 12)²⁹ reports the findings.

The findings of a previous study by Taylor²⁷ of the eye movements of 5000 pupils were similar.

The data in Table I certainly should lead us to reevaluate our previous assumptions. In these studies not even one student read three words per fixation. Thought units, then, must consist of a series of fixations (p. 17).²⁹

A *regression* is a reverse movement. It is a return to a previously fixed letter, syllable, word, or phrase for a refixation. It is a fixation in a right-to-left direction on the eye-movement photograph (p. 17).¹⁰ Eye deficiencies that have prevented accurate sensation, inadequate directional attack, and improper coordination between vergence (permitting single vision) and focus (permitting clear vision) are frequent causes of regression (p. 17).¹⁰ Sometimes the reader regresses out of habit. Such a pupil lacks confidence and feels the need for constant rereading.

Regressions also occur when the flow of thought is interrupted or when perceptions are recognized as inaccurate.² Eye movements frequently over- or under-reach the limits of the reader's recognition span. Regressions for verification, for phrase analysis, and for reexamination of a previous sentence seem especially useful. The flow of thought may be broken in numerous ways, such as by failing to comprehend the basic meaning of a word, by failing to comprehend the meaning suggested by the context, or by failing to interrelate the meanings of all the words.

The number of regressions made per one hundred words varies from reader to reader. The average first grader makes about fifty-two; the average ninth grader about twenty; and the average college student about fifteen. For averages for the other grades see Table I.

Upon completing a line the reader makes a *return sweep* to the beginning of the next line. The return sweep takes from 40 to 54 milliseconds.³³ If the next line is missed entirely or if the eye lands on a point before or after the first word of the new line, the reader must locate the proper place and a refixation is required.

Figure 2-2 illustrates the various components of the movements of the eye as recorded by the eye movement camera.

Table I*
AVERAGES FOR MEASURABLE COMPONENTS OF THE FUNDAMENTAL READING SKILL

	Grade†												Col.
Fixations (incl. regressions) per 100 words	224	174	155	139	129	120	114	109	105	101	96	94	90
Regressions per 100 words	52	40	35	31	28	25	23	21	20	19	18	17	15
Average span of recognition (in words)	.45	.57	.65	.72	.78	.83	.88	.92	.95	.99	1.04	1.06	1.11
Average duration of fixation (in seconds)	.33	.30	.28	.27	.27	.27	.27	.27	.27	.26	.26	.25	.24
Rate with comprehension (in words per minute)	80	115	138	158	173	185	195	204	214	224	237	250	280

MALE

	Grade†												Col.
Fixations (incl. regressions) per 100 words	230	178	158	143	133	123	116	111	106	102	97	94	90
Regressions per 100 words	54	42	37	32	29	26	24	22	20	19	18	17	15
Rate with comprehension (in words per minute)	75	108	132	152	168	180	190	200	210	220	234	248	280

FEMALE

	Grade†												Col.
Fixations (incl. regressions) per 100 words	218	170	152	135	125	117	112	107	103	100	95	93	90
Regressions per 100 words	50	38	33	30	27	24	22	20	19	18	17	16	15
Rate with comprehension (in words per minute)	85	122	146	164	178	190	200	208	218	228	240	252	280

* Stanford E. Taylor, Helen Frackenpohl, and James L. Pettee, *Grade Level Norms for the Components of the Fundamental Reading Skill*. © 1960 (Huntington, New York: Educational Developmental Laboratories, Inc.), Bulletin No. 3, p. 12. Reprinted by permission.

† First grade averages are those of pupils capable of reading silently material of 1.8 difficulty with at least 70% comprehension. Above grade 1, averages are those of students at mid-year reading silently material of mid-year difficulty with at least 70% comprehension.

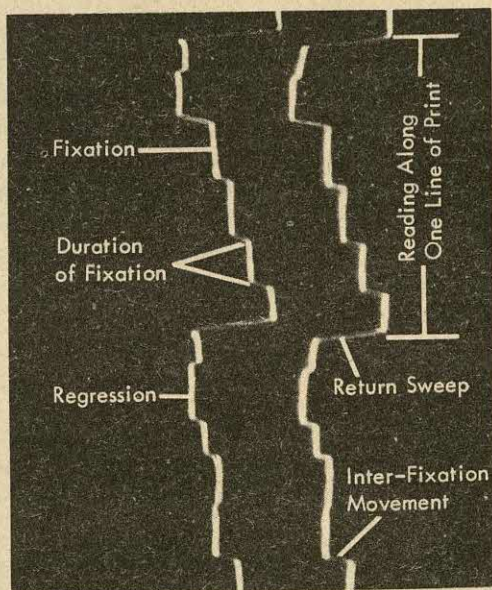


Figure 2-2. Eye-Movement Photograph *

DEVELOPMENTAL ASPECTS OF EYE MOVEMENT

Eye-movement skills develop rapidly during the first four grades, but after this relatively little improvement occurs. A slight improvement may occur between grades six and ten, after which a leveling process occurs (pp. 105-106).¹

Recently, oculo-motor behavior has come to be regarded primarily as a symptom of the underlying perceptual and assimilative processes. Eye movements do not cause, but merely reflect efficient or poor reading performance. Generally, as the difficulty of the material increases and as the reader takes greater pains to read well, the pauses become more frequent and grow longer.³² The difficulty of the material rather than the nature of the subject matter is the crucial element.

The immature reader generally does not vary his eye movements with the difficulty of the reading matter or with a change of purpose. The good reader, on the other hand, is distinguished from the poor reader by his better word recognition, word analysis, and comprehension and these frequently are reflected in more efficient eye movements. Thus, eye movement patterns reflect the efficiency of the central processes of comprehension,³³ and are generally symptomatic of the level of reading maturity the child has achieved. The poor reader makes extra fixations

* Taken from Bulletin No. P-248. (Huntington, New York: Educational Developmental Laboratories, Inc.). Reprinted by permission.

and regressions because he doesn't understand, and he needs training to improve word recognition and comprehension rather than eye movement.

Under certain conditions both good and poor readers show irregularities in their eye movement. And, although eye-movement surveys indicate that a great number of children have not developed the habit of perceiving materials in a left-to-right progression, while making a minimum number of fixations and regressions (p. 32),²⁸ one must always remember that most of these surveys involve situations that are somewhat atypical. The pupil's eye movements might be different in normal reading.

THE EYE-VOICE AND EYE-MEMORY SPANS

Thought-unit reading, as noted previously, is not the same as interpreting an eyeful of print at a time. Because of this distinction, we speak of the eye-memory span in silent reading and the eye-voice span in oral reading.

The eye-memory span is the distance the eyes have traveled ahead of the point at which interpretation occurs. The eye-voice span is the distance the eyes have moved ahead of the point at which the pronunciation occurs. The mature reader has a wide eye-memory span and a wide eye-voice span. He does not commit himself to an interpretation until he has read a sufficient amount of material. He delays his interpretation of the visual intake until he has perceived enough material to grasp a thought unit (p. 75).¹⁵ He keeps in mind a sufficient amount of context so as to make the best interpretation. We find a similar span in listening. The good listener listens for meaning and for thought units, rather than for one word at a time.

Generally in silent reading the mature reader has a span of from fifteen to twenty letters. In oral reading it is slightly less. Rate improvement depends, to a great extent, on the shortening of the fixation pauses and on the lengthening of the eye-memory and eye-voice spans (p. 81).¹⁵

*Reading—A Perceptual Process **

Reading, however, is more than a sensory process. It is more than a skill to be learned through practice; it also is a conceptual and thinking process. Conceptual thought is required to react with meaning to the word, the sentence, and the paragraph.

Perception refers to the interpretation of everything that we sense. We give meaning to what we see, hear, taste, smell, and touch. At a very elemental level, such as when the perceiver sees a black dot on a

* Read Smith and Dechant, *Psychology in Teaching Reading*, (Chapter II); ²⁴ also see Henry P. Smith, "The Perceptual Nature of the Reading Process," *Bulletin of Education*, University of Kansas, Lawrence, Kan. (February, 1962), 60-69.

white background, sensation may dominate perception and the percept may have few characteristics not found in the stimulus. At a more complex level, the sensation is clothed with the perceiver's wealth of past experience and values, and the percept reflects the biological and environmental characteristics of the perceiver.

Thus, although reading begins with sensation and the subsequent recognition of the printed symbol, the critical element in the reading act is the meaningful response rather than the recognition of the symbol. Perception must include the arousal of meaning. To understand the meaning of a word the reader needs to have some awareness of the experiences that the word stands for. Beginning readers frequently become so engrossed with the mechanical aspects of reading, with word identification and pronunciation, that they fail to understand the need for comprehension.

Reading, which requires interpretation of what is read, occurs only when the reader understands what he is reading.⁶ Korzybski notes that reading is the reconstruction of the events behind the symbols. And Semelmeyer²² points out that reading should bear the same relationship to experiences or events that a map bears to the territory which it is supposed to represent.

Since the symbol has no meaning of its own, perception must go beyond the sensory data. It must, and does, involve information that is not present to the senses. The reader does not see the object, person, or experience of which the author writes. His eyes are in contact with a word, in fact with the light rays that are reflected by the word, and so it is impossible for him to see meaning. And yet, the child takes meaning to the word. He has learned the meaning of the word with the same mental operations that he used to learn the meaning of a squeaking door, a clap of thunder, a barking dog, or a square room.²¹ His reactions to the printed word are determined by the experiences that he has had with those objects or events for which the symbol stands. This is what we mean by perception.* Perception is a consciousness or awareness of the experiences evoked by a symbol.

SPECIFIC AND GENERIC MEANING †

Individuals differ in their ability to react to symbols and their interpretations have varying degrees of accuracy. They think of words in their

* Hebb (p. 179)¹⁴ defines perception as those mediating processes to which sensation gives rise. Quite commonly, these mediating processes are labelled thought, cognition, or ideation, and they serve as a link between the sensory input and the organism's response (p. 48).¹⁴

† See Smith and Dechant, *Psychology in Teaching Reading*, pp. 36-38.

general or specific sense (p. 120).⁸ Aphasics, individuals who have lost the ability to react to and handle abstract symbols, do not react with a general meaning. A "bear" indicates not a class of bears but one specific bear in their experience. Young children and frequently poor readers are like aphasics in their reactions to symbols.

Liublinskaya²⁰ reports that a one-year-old child associated the word "ribbon" with the ribbons on her bonnet but not with the ribbon from which dangled a celluloid parrot. The same child applied the word cup to a small pink cup with white spots, but not to a larger white cup.

Jan Tausch,¹⁷ studying 170 children in the fourth to the seventh grade, found that good readers were characterized by abstract thinking and that poor readers demonstrated concreteness in behavior. The relationship is more significant in the upper grades, suggesting perhaps that reading comprehension at the upper grade levels is more abstract in nature. Other studies show that intelligence is more closely related to reading comprehension at the upper grade levels than at the lower levels. Thus intelligence may become a more important determinant of reading success as the abstractness of the materials read increases.

Specific reactions to symbols also are observable with older children. They find abstract words especially difficult, and identify them with specific experiences: "Beauty is when you comb your hair neatly." "Sportsmanship is when you do not kick somebody." Children easily give meaning to *a book, a building, a car*, but not to the more complex concepts represented by the words *beauty, democracy, and truth*.

Another example may be taken from reading itself. Pupils frequently make substitutions when they read. The good reader tends to substitute words that harmonize with the context. The poor reader, on the other hand, substitutes words that do not fit the context. He may not have had sufficient experience to bring the appropriate meaning to the printed page, and communication between writer and reader does not occur. He cannot see the relationships between the various words and the various ideas communicated.

Generally, the writer and the reader communicate only if they are capable of assigning some common meaning to a symbol. This means that they must have had some commonality of experience. And usually they must be able to make a generic response to their experience.* Thus, Bruner (p. 125) †³ notes: "If perceptual experience is ever had raw, that is, free of categorical identity, it is doomed to be a gem serene, locked in the silence of private experience."

* One cannot infer, however, that all words represent class concepts. The words, *yes, no, in, whether, and or*, for example, do not refer to classes of things.

† Jerome E. Bruner, "On Perceptual Readiness," *Psychological Review*, 64 (March 1957) 123-152. Reprinted by permission of the American Psychological Association.

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With experience the person makes the word generic in meaning. He abstracts, forms concepts, learns to associate these concepts with printed symbols, and identifies the word with a category or a class of objects. When perception is on an abstract level, when the reader associates a concept with a word, then, indeed, perception is a kind of summing up of the meanings of numerous sensory impingements.²¹ The reader then is capable of bringing sufficient meaning to the printed page to permit him to obtain from the page an approximation of the experience that the writer is trying to convey. The reader attains an understanding of the writer's experience and hence his perceptions. Only then is communication via reading taking place.

And yet, the perception of a word is rarely completely congruent with the meaning intended by the writer. Furthermore, concept-environment concordance is rarely completely present. Verbal symbols at best are inadequate substitutes for direct experience. There is no direct connection between symbol and referend, the datum, object, or event. Whatmough (pp. 178-179) ³⁶ notes:

It is the mistaken identification of these that is responsible for the worst abuse of language. . . . If the deliberate fault of postulating a direct connection between symbol and referend is committed, or if this is done innocently by the unsophisticated, it gives rise to the dangerous illusion that by manipulating the symbols it is possible to manipulate the referends. . . . Another danger is to exclude the referend. Here we have the vicious practice of verbalism, of moving repeatedly from symbol to cerebral construct and back again, of responding entirely to *one's own verbal response*.*

THE DEVELOPMENT OF MEANING

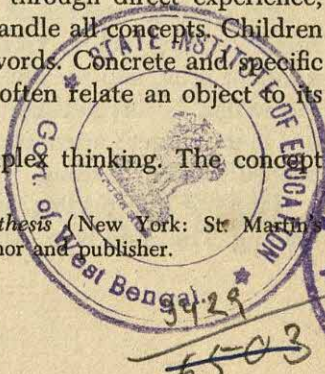
Since the good reader may well be differentiated from the poor reader by his inability to take the appropriate meaning to the page, the reading teacher is concerned about the development of meaning and concepts. We know that children can learn to conceptualize. Depth and variety of experience perhaps are most significant. And the broader the concept, the more abstract it is, the greater is the amount of experience needed for its formation.

Not all concepts, however, can be taught through direct experience, nor do children come to school prepared to handle all concepts. Children go through stages as they learn to interpret words. Concrete and specific concepts probably are developed first. They often relate an object to its function: a bat is used to hit a ball.

The child gradually engages in more complex thinking. The concept

* Joshua Whatmough, *Language: A Modern Synthesis* (New York: St. Martin's Press, Inc., 1956). Reprinted by permission of author and publisher.

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of time in sequence and the concepts of latitude, sphericity, date line, zone, altitude, or longitude, for example, generally do not develop before grades six or seven. Cause and effect relations rarely are understood before the age of nine, and many social concepts escape children until they are twelve or thirteen.

Even though experience is a major determinant of meaning, other factors are important. The culture in which one lives surely is another important determinant of what a word will mean. We also know that each perceptual experience has its emotional matrix. In this sense reading involves feeling. The affective state of the reader may distort, color, or alter meaning to such an extent that communication becomes impossible. Some things forever escape our comprehension because we cannot accept them emotionally.

These elements—culture, experience, affective factors, and our own perception of them—combine to make our interpretations of a word a very personalistic experience. The fact that our reactions are organismic, that they involve our whole being, makes it almost impossible to communicate perfectly. Our interpretations and our meanings are truly our own.

Oral Reading

Even though the major emphasis in reading today is on silent reading, children need to become good oral readers. Pupils benefit educationally by reading aloud prose, poetry, or drama. There are many benefits in choral reading—oral reading by a group. It leads to better appreciation of literature and to improved pronunciation, phrasing, interpretation, rhythm, and flexibility.

Oral reading also has social values. It provides enjoyment in a social group, helps the child to substantiate answers challenged by others in a group, lets him share content to which all do not have access, and is useful in making reports and announcements, and presenting other information to a group.

Finally, oral reading has diagnostic values. It is helpful in testing for fluency and accuracy in reading. Since reading requires the association of a printed form with an oral equivalent, it would seem only logical that oral reading would be used to emphasize this relationship.

Oral reading requires all the sensory and perceptual skills required in silent reading, such as visual discrimination, rhythmic progression along a line of print, and the ability to take to the word those experiences that the writer, by his peculiar choice and arrangement of words, hoped to call to the reader's attention. Oral reading also requires skills beyond those needed in silent reading.

Habits of oral reading usually are quite different from those in silent reading.^p The child who exercises great care in his oral reading may pass

over the difficult words in silent reading. In oral reading there are generally more fixations, more regressions, and longer pauses. Oral reading generally is slower than silent reading. In oral reading, reading rate is limited by pronunciation; in silent reading, it is limited only by the ability to grasp meaning. Oral reading calls for interpreting to others; silent reading only to oneself. Oral reading demands skills in voice, tempo, and gesture and in sensing the mood and feeling intended by the author. And, there are some differences in neural pathways in oral and silent reading (Figure 2-3).

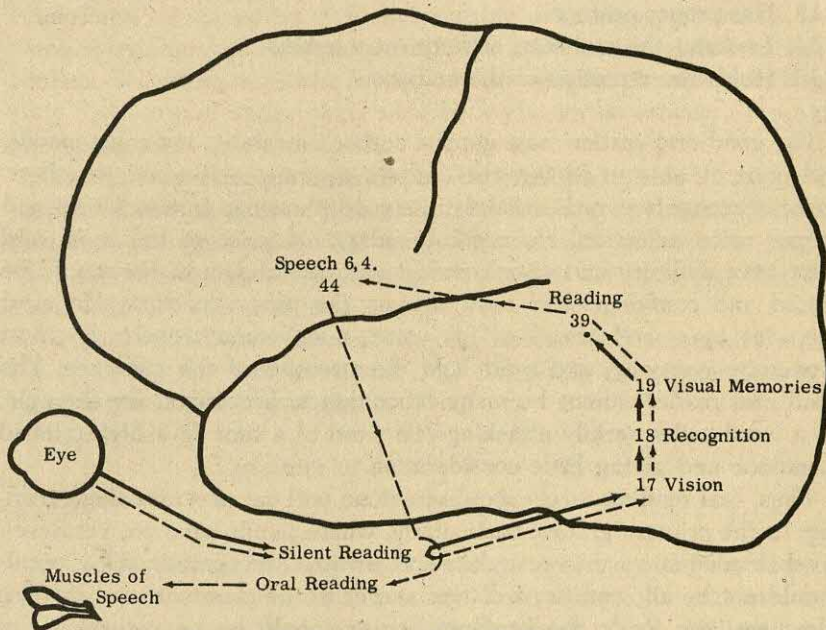


Figure 2-3. Pathways in Oral and Silent Reading *

Oral reading, like silent reading, consists of a complex of skills. The basic reading skills are discussed at length in Chapter 9. Let us confine ourselves then for the moment to those specific skills required for proficiency in oral reading. The good oral reader:

1. Interprets the author's meaning accurately.
2. Transmits correctly the author's meaning to the listener.
3. Makes a proper interpretation of the author's feelings and moods.
4. Reads in meaningful thought units.
5. Is accurate and clear in articulation, enunciation, and pronunciation.

* Thomas H. Eames, "Visual Handicaps to Reading," *Journal of Education*, 141, February, 1959, p. 35. Reproduced by permission of the author and the *Journal of Education*, Boston University.

6. Gives an accurate translation of the writer's punctuation marks into pauses, stops, etc.
7. Is fluent and smooth in reading, keeping the eye well ahead of the voice.
8. Has suitable quality and volume of voice.
9. Has suitable pitch.
10. Has unlabored speech.
11. Avoids labored precision in reading aloud.
12. Has appropriate rate.
13. Has proper posture.
14. Looks at the audience at frequent intervals.
15. Holds the attention of the audience.

The good oral reader must get the author's meaning, sense his moods, and must be able to convey the author's meaning and mood to others. He must recognize words instantly, use good phrasing, pronunciation, and proper voice inflection. He needs to adapt his voice to the room and must have auditory and visual contact with the audience. He should be poised and confident, and must assume the proper posture. He must keep his eyes well ahead of his voice, must enunciate clearly, must pronounce correctly, and must hold the attention of the audience. The good oral reader cannot be many other things, he cannot, for example, be a word caller, jerkily attacking one word at a time in a high-pitched monotone and giving little consideration to meaning.⁷

Thus, oral reading rarely should be done without previous silent reading. In the primary grades, particularly, where pupils have not yet developed an adequate sight vocabulary and adequate recognition skills, pupils should not be allowed to read their stories to the class without previous silent reading. From the beginning stress should be on naturalness of tone. The teacher should encourage this by asking the pupil to read the sentence in the manner that he would speak it, since the best model for oral reading is speech. Passages frequently should be read to the pupil to give him a feeling for conversational tone.

The teacher also needs to pay particular attention to the child's articulation, enunciation, and pronunciation. The emphasis should be on simple rhymes and stories using the sounds needed at the child's specific stage of development. Pronunciation should be corrected tactfully, without embarrassing the child. Mispronounced words should be practiced as parts of a sentence.

The pupil also must learn appropriate pitch, quality, and volume of voice. Voice factors are important for the listener. Listening is more or less difficult depending on the voice qualities of the reader. Rhymes requiring the child to change moods, to interpret sounds of animals, and

to interpret various human voices promote voice proficiency. The pupil needs to be given the opportunity to read to a single child, to a group, and to engage in choral reading.

The most essential vocal skills are phrasing and smoothness. The reader must be able to keep his eyes well ahead of his voice so he can organize and group the words, giving them the proper inflections. This means that the child should read simple materials without too many new words. Generally, materials written by the child himself which are based on the vocabulary that he knows are most effective. Many errors of communication are the result of faulty phrasing or grouping of words. Generally, phrasing will be appropriate if the child understands what he is reading. Sentences should be broken into meaningful phrases and clauses. Only if the reader understands what he reads can he convey a meaningful message.

The teacher can check upon the child's proficiency here by asking the pupil to read two or three lines aloud and then stopping him. The pupil then is to say aloud additional words that he read silently, but that he has not yet read aloud. A narrow eye-voice span indicates that the pupil needs help in looking ahead.

The oral reader also must learn to emphasize words properly. He does this by giving the word more stress, by elongating the pronunciation, or by saying it with a higher pitch.

Summary

In this chapter we have examined reading as a sensory and a perceptual process. As a sensory process reading is dependent on certain visual skills. The eyes must have matured to the point where they can react to printed symbols. They must be able to distinguish one printed form from another. They must focus on minute stimuli, and they must progress from left to right and from one line to the next.

Reading also is a perceptual process. The reading act is complete only after the child has interpreted the printed symbol by bringing meaning to it. Meaning itself is dependent on experience, culture, the emotional state of the reader, and the reader's ability to reconstruct his experiences. Meaning is complete only when the reader has developed the ability to pick out the key words, and to relate words and sentences to one another.

Finally, the importance of oral reading was outlined. Oral reading has educational, social, and diagnostic values. Since fluency in oral reading seems to be just as much of a basic reading skill as is silent reading, the reading program must make provision for the development of those skills required for successful oral reading.

Questions for Discussion

1. Discuss the implications of Gray's description of the reading process on the teaching of reading.
2. What are the implications of the general findings of the study by Taylor, Frackenpohl, and Pettee?
3. Is it desirable to develop the eye movements of the reader? In your answer discuss the relationship between eye movements and the central processes of comprehension.
4. Reading is said to be a thinking process. Find four reading passages that illustrate the thinking processes of analysis-synthesis, problem solving, inference, and organization.
5. Discuss the various levels of definitions of reading.
6. Why in the definition of reading is it necessary to include the words: "giving the significance *intended by the writer* to the graphic symbols"?
7. Reading in this chapter is described as "the bringing of meaning to the printed page." What are the implications of this for the beginning reader, the slow learner and/or reader, for rate improvement training, and for reading in the content areas?
8. What is the relationship between degrees of comprehension and experiential background?
9. Discriminate between thought-unit reading and the suggestion that the child should learn to read two or three words per fixation? Does a fixation constitute a thought unit? What are the implications of recent findings in this area as regards to the development of the child's memory and retention span?
10. Compare a child's development of a percept of "chair" with his perception of the word "cat."
11. Discuss the statement: "Reading should bear the same relationship to experiences or events that a map bears to the territory which it is supposed to represent."
12. Discuss: "Perception is a kind of summing up of the meanings of numerous sensory impingements."

Basic Reading Principles

We hope that the reader will find it useful to examine each of the following statements, thinking of them as "postulates" or "tentative principles." Some surely are well-verified in research and should be of great value in guiding educational practice. Others call for more experimentation.

Each statement summarizes a significant amount of data and research. Not all the research, however, supports the statement. There is sometimes, in fact, contradictory research.

Each statement can be used to stimulate classroom discussion or may become an essay question in an examination requiring the student to

support or reject the statement on the basis of experimental evidence. Some statements are of such a nature that they should challenge even the most gifted student.

1. Reading is the development or creative construction of meaning in response to external stimuli, usually written words.
2. Reading is the bringing of meaning *to* rather than the gaining of meaning *from* the printed page.
3. Reading is the process of giving the significance, intended by the writer, to graphic symbols, by relating them to one's own fund of experience.
4. The average six-year-old does not have the visual readiness to react to stimuli as small as a word.
5. The average reader rarely comprehends more than one word per fixation.
6. A thought unit usually consists of a series of fixations.
7. Eye movements or oculo-motor habits usually show rapid growth to about the fifth grade and continued but reduced growth to about the tenth grade.
8. Each individual has his own typical oculo-motor habits and these are symptomatic of underlying perceptual and assimilative processes.
9. Eye movements reflect rather than cause maturity in reading performance.
10. The critical element in reading is the meaningful response rather than the recognition of the symbol.
11. A word is a purely arbitrary symbol possessing no meaning of itself; a symbol can do no more than suggest meaning.
12. The greater the number of concepts that the reader has fixed through words, the better will be his understanding of what he reads. Comprehension, or the apprehension of meaning, is a direct function of (1) the number of words the person knows and (2) the number of meanings that he associates with each word.
13. Perception is a kind of summing up of the meanings of a vast number and quality of particular sensory impingements.
14. Generally, the more generic the reaction to printed words, the more effective is the communication between writer and reader.
15. Differences in abstracting ability, or in the ability to think in categories, differentiate the superior reader from the poor reader.
16. Reaction to a word is organismic. It is a function of one person's innate endowment, of the quality and number of his prior experiences, of his ability to reconstruct these experiences, the organization of experiences, his affective state, the culture, and the context in which the word occurs. The "whole child" reads.
17. Facility in conceptualization is a function of previous experience in concept formation. The progression in concept formation is from simple to complex; from diffuse to differentiated; from egocentric to objective; from specific to general; and from inconsistent to consistent.
18. The number of meanings associated with a word is a function of the number of experiences. Words may suggest multiple meanings. The number of meanings actually suggested depends on the number of experiences the reader has associated with the word.

19. The number of different meanings of a word is related positively to the frequency of word usage. "It has been discovered that the number of different cultural meanings (m) of a word tends to be directly proportional to the square root of the relative frequency (F) of its occurrence, i.e.,

$$m = F^{\frac{1}{2}}$$

This was found by plotting logarithmically the average number of different meanings (as ascertained by a previously made *semantic* count) of the 20,000 most frequently occurring words (as ascertained by previously made *frequency* counts) against the logarithm of the respective frequency-rank of the words (p. 74).^{* 36}

20. The specific meaning elicited by a word is a function of the context in which it occurs.
21. Perception of new words and the recognition of words that have been seen before occur more readily when these words are accompanied by familiar rather than by unfamiliar words.
22. Poor readers in their reactions to symbols frequently are like aphasics and young children, giving more individual and specific responses to words.
23. The validity of the reader's perception is its predictive value in action. The meaning of tractor that may be aroused by the word "caterpillar" may be adequate in one response situation; in another situation such a response to the word would not be validated in action. The word might then more appropriately suggest the concept larva. The perceiver calls upon his previous experience and assumes that the perception that was most probable in the past is the most probable now. He decides on the meaning that has the best predictive value, on the basis of his previous experience, for interpreting what is read. When he finds that he is wrong, he changes his interpretation, even though the retinal image does not change.
24. The reliability of the initial perception of a word decreases as the number of meanings that may be associated with the word increases. A six-year-old child's perception of a word tends to be more reliable if the printed word suggests only one meaning than if it can suggest ten different meanings.
25. Perceptual veridicality or concept-environment concordance is a function of experience. The fact that the poor reader substitutes words that do not fit contextually is explainable by his lack of the experiences that are necessary for veridicality. The reader perceives whatever represents for him the most likely prognosis for action based upon his experience. The good reader's prognosis generally is better than that of the poor reader.

* Joshua Whatmough, *Language: A Modern Synthesis* (New York: St. Martin's Press, Inc., 1956). Reprinted by permission of author and publisher.

Part Two



THE NATURE OF THE LEARNER

In our introduction to Part One, we pointed out that it is possible to view reading from many angles. In Chapter 2 we emphasized the sensory and perceptual nature of the reading process. The emphasis was on the *nature* of the reading process. In Part Two our emphasis is upon the *learner*. Reading is a response made by a learner. Reading must be learned by a learner. It is interrelated with the learner's total growth and development. Children show vast differences in physical, intellectual, social, and emotional development. They have different backgrounds, experiences, and interests, and they have received different instruction.

Chapters 3 and 4 attempt to identify the pupil who learns to read well and the child who frequently ends in failure. We are interested also in answering *why* certain children have more difficulty than do others.

The causes of behavior are multiple, complex, and interrelated. The child is a product of both heredity and environment, and generally it is impossible to differentiate the particular role of each. Nevertheless, certain principles of behavior, growth, and development can be stated:

1. The development of each child is caused. In general, there is a reason why the child either achieves or fails to achieve in reading.
2. The causes of development are multiple and complex. Achievement in reading and retardation in reading must be viewed as complex processes explainable only by a group of related causes or factors.
3. Development is a continuous process: What happens at one stage of development influences subsequent stages. This principle suggests the need for careful planning of the reading program. It has important implications for the teaching program. Too much of a delay or too early an introduction of reading teaching may both be harmful.

4. Development and growth generally are orderly and gradual. All children go through the same genetic and developmental sequences. Children usually learn to walk only after learning to stand. They learn to speak only after a certain amount of experience in listening. However, some children may skip one of the intermediate steps or, because of structural defects, the order may be altered. Thus, a child may learn to read before learning to speak.
5. Growth sequences generally are sufficiently lawful to permit the teacher to develop norms for the average child. These norms, however, must not become standards by which pupils are rated. It is no more ridiculous to have children of one class wear shoes of the same size than to expect them to achieve equally. Group norms must be used to appraise the progress of individuals, not to restrict their progress.
6. Children usually develop as a unified whole. Children's physical, social, emotional, and intellectual growth generally is unified. The growth curves for any given child in each of these areas usually are high, average, or low. Thus, the relative rates of growth tend to remain constant from childhood to adulthood. However, not all aspects of growth proceed along an even front. After having learned a few words, the child may not learn another word for a long time. During this period of apparent language stagnation, the child may be progressing along another front.
7. There are wide variations in growth and development. Not all children reach a plateau or make a spurt at the same time. Each child's growth is unique. He is different in some degree from any other child. The rate of growth and the ceiling of potential levels of achievement vary considerably, even though the developmental sequence is fairly constant. Sex differences in growth and development are particularly noticeable.

These principles have important implications for the teaching of reading. Development in reading closely parallels and is an expression of the forces of human development generally. Indeed, if teachers could truly divorce achievement in reading from other aspects of growing up, they might be able to produce a standardized product.*

Unfortunately, this is not possible. The child reads with his biology and his geography, with his nature and his nurture. He is a product of the interaction of these two forces, and these forces are accountable for the vast differences between children. No two children develop to the same point at the same time in any given characteristic. Growth and development are variable and so is achievement in reading.

* W. D. Olson, "Child Growth and Development," *Reading*, Association for Childhood Education International (Washington, D.C., 1956), 2-5.

Reading is a developmental task, and the child's readiness for it depends upon the child's general development. There is for each child a most teachable moment for learning to read and for the learning of every subsequent reading skill. This teachable moment depends on many factors. Thus, the following two chapters attempt to identify those aspects about pupils that have a major bearing on their readiness for and achievement in reading. Chapter 3 will emphasize the experiential, intellectual, and physical aspects.

3

THE LEARNER

The major element in any learning process is the learner. He is the one variable in any learning situation that the teacher must understand fully. It is his behavior that the teacher needs to understand, accept, predict, and direct.

Educational psychologists have concentrated their efforts on the learner. They have sought to identify the causes of his behavior; they have tried to discover how to bring about certain desired changes; and they have concerned themselves with identifying the growth that is taking place.

In these three principles, cause, change, and growth, the teacher finds his greatest challenge. He must understand the causes of behavior. He must be sensitive to the needs, interests, and ambitions of children. He must know how to promote change in the direction of growth. He has the responsibility of transmitting the skills, knowledge, and attitudes that are concordant with desirable behavior.

As we have already stated, reading is a developmental task. It is a task that the child must perform in order to satisfy his own needs, so that he may satisfy the demands made upon him by society and so that he may be better prepared to handle subsequent developmental tasks. As with other developmental tasks, success in reading is determined by the child's state of progress in other areas of development and in turn this success affects the child's development in these areas.

There are both biological and environmental determinants of readiness for and achievement in reading. Among the more important factors are the child's intellectual, physical, social, and emotional development, his general proficiency in language, and his sensory equipment. Success in reading also depends on the child's proficiency in auditory and visual discrimination. It is assured by a wide background of personal experience, by a genuine interest in reading, and by an adequate instructional program. The pupil, if he is to learn, must perceive the learning situation as

meeting his needs. He also must have had adequate preparation so he can profit from the present learning experience.

These factors are inextricably interrelated. Obviously, no one single factor determines a child's success. It is the pattern, the complex of correlates, with which we must be concerned. Although each factor contributes something to achievement, some factors have a higher weight value in the correlate pattern. Some factors are relatively more important than are others. Let us examine them individually.

*Experiential Background **

Experience is the basis for all educational development. Concepts develop from experience, and their richness and scope are in direct proportion to the richness and scope of the individual's experience. The most important reason for the difference between the adult's concepts and those of the child is the differential in experience and knowledge. Frequently the significant reason for differences in reading achievement is the differential in experience.

Most studies have shown that children from homes that provide a rich background of experience generally are ready to attack the printed page. Children who have had experience with books and magazines and who have opportunities to make trips, to go to summer camp, to hear good language, to be read to, and to attend a nursery school tend to develop an interest in and generally are proficient in reading. Their potential for concepts and meaning is greater than that of children who lack this background. They are ready to bring meaning to the printed page.

Although high socioeconomic status is not a completely accurate indicator of reading achievement, it generally goes hand in hand with broadness of experience. This broadness of experience results in superior readiness for reading by equipping the child with the tools for meaningful reaction to the printed page. The symbols on the page are empty unless the reader endows them with meaning. For this the pupil needs the appropriate experience.

Schools today are geared to children from middle- and upper-class socioeconomic homes. Unfortunately, this does not raise the status of less privileged children. These children usually have lower IQ's, are less proficient in language, leave school at an earlier age, have more adjustment problems, and are less interested in school. Their self-concept is usually low, and thus they frequently do not aspire to high levels of achievement. They are wise in the ways of the street but are rarely aware of the cultural opportunities in the world about them. Their cultural horizons rarely extend beyond the city alleys, and, because of this, they

* See Smith and Dechant, *Psychology in Teaching Reading*, pp. 95-99.

cannot bring meaningful concepts to the symbols on the printed page.²⁹

The duty of teachers seems clear. If the child comes from an environment that does not stimulate experiential and perceptual growth, the school must provide the preparatory experiences. There is a special need to supply children from the lower socioeconomic groups with stimulating nursery school and kindergarten experiences, with neighborhood reading centers, and with bookmobiles. Unfortunately, such experiences and opportunities are most available to children in the higher economic groups.

Of even greater significance in teaching culturally deprived children is the realization that their reading achievement scores frequently are low because the reading materials in school present experiences alien to their own. As one teacher put it, these children read stories about "Saturday Night on Madison Street," but either can't or won't read "Dick and Jane." They find little material in the "Dick and Jane" stories that is familiar to them. When they work with stories and other materials, prepared by themselves or by the teacher, which use vocabulary words familiar to their own experiences, their interest is stimulated and they begin to make progress. The value of teacher-prepared or pupil-prepared materials is readily apparent.

Readiness programs generally have proved valuable. They are especially successful with children who are handicapped by a foreign language background, with children from lower socioeconomic classes, and with dull-normal, underprivileged children. However, some children, although from the upper socioeconomic group, have led an extremely sheltered life. Servants take care of them, and they have little contact with other children. These may need as much experiential stimulation as do children from lower socioeconomic homes.

Generally, the lower the intelligence, the longer should be the reading readiness program. However, the highly intelligent child is not necessarily more ready for reading than is the less intelligent. He knows how to sound out words, but he frequently needs experience to give meaning to his verbalizations.

When there is no kindergarten program, the first-grade teacher should not hurry children into formal reading instruction. Some children have a real need for the readiness program. The teacher cannot overlook the wide diversity in experience between the country child and the city child; between the youngster whose family lives in a slum and the child who comes from a wealthy home. And he must remember that each child's reactions to the printed page are limited by his environment.

Some children, because they come to school able to read, actually may be harmed by a readiness program. Not all children get the needed experiential background in school. Probably most five- and six-year-old children are ready to handle the demands for meaning that are made in first-grade materials.

*Intellectual Development **

Experience alone does not guarantee success in reading. The child needs certain intellectual skills. He must perceive likenesses and differences, must be able to remember word forms, and must possess certain thinking skills. He must have developed an appropriate memory and attention span. He must be able to tell stories in proper sequence, to interpret pictures, to associate symbols or language with pictures, objects and facts, to anticipate what may happen in a story or poem, to express his thoughts in his own words, and to think on an abstract level. He must be able to give identity and meaning to objects, events, and symbols. He must be able to categorize or to associate the particular object or experience with the appropriate class or category.

Intellectual development is a function of both biology and environment. Biology sets the limits to the child's mental development, and how close the child comes to attaining his potential depends upon the environment and the use that he makes of that environment. It depends also upon other factors, among which are opportunity, challenge, desire, nutrition, rest, self-discipline, aggressiveness, and the need to achieve. Thus, biology provides the potential and the environment converts it into abilities. "Native ability" actually is the potential to become able; ability is realized potential.

Intelligence always has been difficult to define. Surely one of the reasons for this is the removal of intelligence from the realm of time. A child's potential for intellectual activity at the moment of conception may not be the same as his potential at birth or indeed at any given moment of life.

At conception the child possesses what might be described as native intellectual endowment. Biology has set a limit at that time to the child's intellectual capacity. In a later portion of this chapter we discuss the human brain. The brain is biologically determined and the "mind," "intellect," "cognition," or "perception" must operate through this brain. In a very real sense, man's potential for intellectual behavior is completely dependent upon the proper functioning of the brain.

Aphasia is an instance of improper brain functioning. As a result of cerebral injury, the aphasic is unable to deal with symbols. He can think only on a concrete or specific level. He cannot think abstractly, he cannot categorize, and he is unable to think of the individual object as a member of a class. He cannot, for example, see that a polar bear and a brown bear are bears. These have an individuality for him that does not allow for categorization.

* See Smith and Dechant, *Psychology in Teaching Reading*, pp. 86-91.

If brain injury can so limit human thought, biology can do likewise. Inadequacy in the genes is a very real cause of inadequate brain development. Nervoid idiocy, amaurotic idiocy, gargoylism (grotesque bone structure), phenylpyruvic idiocy, and primary microcephaly, to mention a few, are caused by gene disturbances. Feeble-mindedness frequently occurs when the mother's Rh factor is positive and that of the child is negative. When the mother's blood and the child's blood are combined, the embryo does not get a sufficient amount of oxygen, the brain is injured, and mental deterioration results.

Intelligence in this sense is the

... functional manifestation of the integrity of the central nervous system. The idea implies that the degree of intelligence manifested by an individual bears a relationship to the structural and functional state of his brain. Damage or failure of development or better than average development of a part of it is likely to produce corresponding variations in the capacity to perform the functions affected by the part (p. 16).^{* 10}

Intelligence can be viewed in another way. At the moment of birth the child has an intellectual potential that has been limited and defined by biology but now also is conditioned by environment. The child's intra-uterine existence may have been favorable, or it may have been unfavorable for the realization of the child's full intellectual potential at the moment of conception. Studies of children with reading handicaps have repeatedly indicated that reading deficiencies have been occasioned by unfavorable intra-uterine experiences or by unfavorable birth experiences.

Experiments with salamanders and squids have produced marked structural changes during embryonic development. The normally two-eyed squid has been changed to a one-eyed organism. In other experiments it was possible to condition the human fetus and some, for example, have intimated that left-handedness may be an example of prenatal conditioning.

Experience has shown repeatedly that the brain, and hence the intellectual functioning of the child, may be damaged by infection, by birth trauma, by toxic agents, or by endocrine disorders. It may be damaged by pressure upon the fetus, by faulty position of the fetus, by temperature changes, by overexposure to X rays, by premature separation from the placenta, by umbilical-cord complications, by an overdosage of the mother with drugs, by delayed breathing of the infant, or by forceps delivery. Barbiturates may produce asphyxiation in the fetus. The mother also can pass diseases on to the child that interfere with normal brain develop-

* Thomas H. Eames, "Some Neural and Glandular Bases of Learning," *Journal of Education*, 142 (April 1960). Reprinted by permission of the author and the Journal of Education, Boston University.

ment. Some common ones are: smallpox, German measles, scarlet fever, syphilis, and tuberculosis.

Finally, intelligence may be viewed as the child's present functioning level. This is essentially what scholastic aptitude tests measure. However, if the child's environment or experience is defective, it frequently happens that a measure of the pupil's present functioning level is not a good indicator of his true potential. It is not uncommon to have a pupil obtain scores like the following on a group intelligence test: linguistic IQ—85; quantitative IQ—115; and total IQ—100. The linguistic score and the total score probably are the best predictors of the child's present scholastic functioning level. Scholastic functioning depends most on the child's ability to deal with symbols, and the linguistic score measures this ability. The quantitative score may be closer to the pupil's true potential. The chances are that a pupil with such discrepancies between linguistic and quantitative scores is from a poor cultural environment, has a reading problem, and/or is bilingual. If the causative factor is removed, it is not uncommon to find that the IQ of such a pupil will rise from fifteen to twenty points.

The teacher essentially is an environmentalist. Even though he cannot add to the child's basic capacity, he can do much to encourage the child to develop his potential. The child commonly has a much greater mental capacity than he is willing to use. As teachers, our task is to challenge the existent capacity of the pupil rather than to try to add increments to his native endowment.

In the light of the above discussion the biological-environmental * controversy seems to be a pseudo-conflict. The relative contribution of biology, for example, depends on the trait under consideration, upon the individual possessing the trait, and upon the environment. Thus, in some environments, the principal cause of reading inadequacy may be biological in origin; in others, where there is inadequate teaching, it may be environmental. Anastasi and Foley (p. 11) ¹ point out that most hereditary-or-environmental discussions are actually concerned with structural or functional factors. Teachers are more concerned with the following: "Is reading failure caused by structural or functional conditions?" Structural conditions may be biological or environmental. Functional defects are only environmental.

MENTAL AGE

For years intelligence was thought to be a unitary factor. Today, few adhere to this point of view. Some persons are spatially or artistically intelligent; others are numerically or verbally intelligent. Some are better

* We prefer the term biological-environmental to hereditary-environmental.

able to discover underlying principles; others have a remarkable memory. As educators, we are most interested perhaps in the pupil's scholastic aptitude. This is essentially a combination of verbal and numerical intelligence and is usually expressed as a mental age or an intelligence quotient.

Mental age (MA) refers to the level of mental development that the person has attained. It is the pupil's score on an intelligence test expressed in age units, or put another way, it is the average age of the individuals who attained that score in the standardization process (pp. 216-217).⁴²

Thus the average five-year-old child has a mental age of five; the average child of ten, a mental age of ten; and the average youth of fifteen, a mental age of fifteen. But because it generally has been accepted that beyond the age of fifteen or sixteen the mean scores on intelligence tests no longer increase significantly, the average youth of eighteen or twenty will still have a mental age of but fifteen or sixteen.*

THE INTELLIGENCE QUOTIENT

Another term, the intelligence quotient (IQ) refers to the *rate of mental development*. We all remember the simple formula: Distance equals Rate multiplied by Time ($D = R \times T$).

We may use an analogous formula in thinking about mental age and IQ: thus, $MA = IQ \times CA$. In the formula MA refers to the distance that the pupil has traveled mentally; the IQ refers to the rate at which he has been going; and the CA refers to the length of time that he has been at it.

If we think of an IQ of 120 as meaning that the person has advanced at the rate of 1.2 years mentally for each year of chronological life (up to the age of fifteen or sixteen), and of an IQ of 80 as meaning that he has advanced 0.8 of a year mentally for each year of chronological life, the formula ($MA = IQ \times CA$) is easy to understand and to use. A ten-year-old boy with an IQ of 120 has a mental age of twelve ($MA = IQ \times CA$ — 1.2×10). Another ten-year-old with an IQ of 80 has a mental age of 8 ($MA = IQ \times CA$ — 0.8×10). The first boy has attained the mental level of the average twelve-year-old; the second, the mental level of the average eight-year-old.

There are four statements that we can make about the IQ:

1. IQ is the rate of mental development
2. $IQ = \frac{MA}{CA} \times 100$

* Actually, the scores cease to increase at the *average* age of fifteen or sixteen years, and thus for some they do not increase at a much earlier age and for others they increase even at a later age.

3. An IQ of 120 means that the individual has developed 1.2 years mentally for each year of chronological life
4. An IQ of a given magnitude also describes the percentage of children in the general population that possess that IQ

Let us give some consideration to this last point. IQ also may be defined in terms of a relative position among a defined group of persons. An IQ tells how much above or below the average an individual is when comparing himself with persons of his own age. It measures the person's ability relative to persons of his own age group.

Studies have shown that the IQ is normally distributed. We plot this distribution on what we call a normal curve. The curve is merely a graph showing on the baseline some type of score, and the height of the curve at any given point indicates the number of cases that fall at that point. The curve shows the distribution of IQ's and the percentage of persons that have a given IQ.

EDUCATIONAL IMPLICATIONS

The IQ certainly is not an adequate criterion for reading readiness or achievement. However, it is significant in that it puts a ceiling upon individual achievement. Individuals with an IQ below 25 have little chance of learning to read; those with an IQ below 50 will experience difficulty with abstract materials; and those with IQ's between 50 and 70 rarely will be able to read above a fourth-grade level (p. 28, p. 227).^{24, 22}

The IQ also is an important long-range predictor of the child's performance. The child with a 150 IQ who is only six years old may not be as efficient a reader as the child with a 100 IQ who is ten years old. With time, however, the chances are that he will reach a higher level of reading proficiency.

Mental age, generally, is a much better indicator of reading readiness and achievement than is IQ, especially at the early levels. To be able to read, many skills are necessary that come only with age.

Correlations between intelligence and reading ability generally vary from about .35 in the first grades to about .65 in the sixth grade (p. 42).³ This finding is significant. It implies that intelligence is a more important determinant of reading success in the later grades than in the earlier grades. In the later grades, reading scores are an expression of proficiency in content-area reading. Content-area reading generally requires greater use of those skills that we associate with intellectual activity.

Even though the correlations between intelligence and reading achievement are high, they are not perfect. Intelligence is not the sole, nor necessarily the best, indicator of reading readiness or achievement. High intelligence does not guarantee success in reading. Research indicates that the

great majority of poor readers have IQ's between 80 and 110 (p. 228) ⁴⁹ and that frequently the most severely retarded readers in relation to their mental age have IQ's of 130 or more.

The question has always arisen: When is the child ready for reading? In *Psychology in Teaching Reading* (pp. 103-110), Smith and Dechant summarized thinking on this point. There is evidence against hurrying the child too much. There also is evidence against delaying instruction. However, a somewhat delayed start in reading usually does not do children any harm. A first-grade program that is rich in experience and social activities, even though it has no formal reading instruction, avoids many problems of reading failure and ultimately may lead to as good or better reading achievement in the upper grades as a program that begins formal reading instruction in the first grade. Generally, the lower the intelligence, the greater the need for a readiness program.

Through the years a mental age of six and one-half has been generally accepted as the optimal age for beginning reading. Research, however, provides little support for choosing a specific mental age as a criterion. The facts are that many children with a mental age of six and one-half do not succeed in reading and many other children learn to read who have not attained a mental age of six. If the reading materials are suited to their level, if they are interesting, and if the teaching method is adapted to their intellectual maturity, children may learn to read at mental ages considerably below six and one-half. There also is little doubt that three-, four-, and five-year-olds can be taught to read. The important question is: "Is this desirable?" It appears that the younger the pupils, the lower should be the teacher-pupil ratio.²¹ A teacher needs to work more closely with younger children.

Durkin,⁵ in a study of forty-nine children who read before school age, found that over one-third of the group had IQ's below 110. She adds that the children as a group had exceptionally good memories, concentrated well, were curious, conscientious, persistent, and self-reliant, and had a high regard for reading. These children had not been pressured into reading by too-ambitious parents. They were simply responding to their word-filled world.

Durkin⁶ suggests ways of initiating the teaching of reading in the kindergarten. She recommends, for example, that attendance sometimes could be taken "by sight." Each child would have a card on which his or her name was printed and instead of saying "present" would raise his card. At some other time each child might pick his own card from a pile of cards and stick it on a flannel board. The children might later help the teacher to put these cards in alphabetical order. Children might be asked to note differences and similarities in their names—both visual and sound differences.

Children, in making pudding, might learn that certain words or sym-

bols on the box, such as *mix*, *heat*, *chill*, or *eat*, tell us something. A simple experience may become the content of a simple story. The story could be put on cardboard and hung about the room. The words could later be printed on small cards and children might be permitted to copy the words. Durkin points out that some children acquire skill in reading, not by reading books, but by writing and spelling words.

Physical Development

We have discussed two determinants of the child's achievement in reading. Let us look at another group of related conditions which, for want of a better term, we shall refer to as physical factors.

The child is both physical and physiological. Functions such as vision, hearing, and thought are possible only through the organs of the body. If the organ is defective, the function is likely to be impaired. This may, especially in the case of vision, hearing, and thought, lead to serious reading difficulties. In general, good health is conducive to good reading, and poor health is often associated with reading deficiency.

*Physical Health **

Reading is an act, a performance, or a response that the reader makes to the printed page. Unfortunately, certain factors may prohibit making the response. Glandular dysfunction (pp. 23-32),^{10, 9} hemoglobin variations, † vitamin deficiencies, nerve disorders, nutritional and circulatory problems, heart conditions, infected tonsils, poor teeth, rickets, asthma, allergies, tuberculosis, rheumatic fever, or prolonged illness can lower reading achievement and postpone or prevent reading readiness.

Eames¹¹ points out that tumefaction of the pituitary gland may lead to a reduction in eye span and consequently to an increase in the number of fixations. Hypothyroid conditions may prevent normal fixation on what is being read and thus lead to daydreaming, poor attention, slow word recognition, and general fatigue. Diabetes mellitus is associated with visual defects, confusions, excessive regressions, and loss of place.

The teacher must be cautious in interpreting the relationship that these factors seemingly have to reading deficiency. Generally, physical inadequacies are contributory factors rather than factors causing reading problems. Illness keeps the child from school and causes him to miss important phases of instruction. Any physical inadequacy makes it difficult to become enthusiastic about learning and may result in lowered vitality, in depletion of energy, in slower physical development, and hence in mental retardation. Physical inadequacies cause the child to

* See Smith and Dechant, *Psychology in Teaching Reading*, pp. 154-156.

† Low hemoglobin content is associated with the diminution of acuity in vision and hearing and with impaired writing performance.

center attention on them and away from learning. The child with a smashed finger, a broken hand, a headache, or poor eyesight may be unable to concentrate on a learning task. The malnourished child does not have the energy to be an effective learner.

Sometimes a lowering of the child's basic vitality is closely related to the functions required for successful reading. The basal metabolic rate, *BMR*, for example, affects the convergence of the eyes.* If the rate is low, the child may not be able to aim his eyes properly in binocular vision, and thus may frequently regress, omit words, lose his place, and become fatigued. And, fatigue makes it difficult to become interested in a reading task. Attention suffers and comprehension is usually lowered. As nervous tension builds up, the pupil becomes disinterested, disgusted, and may even turn from reading completely.

Visual Adequacy †

We already have spoken of the child's need for visual proficiency. Studies also indicate that children often may not be visually ready for reading before the age of eight (p. 91).³⁶ The eye becomes structurally complete about that time. At six, the eyes frequently are too farsighted to see clearly and with ease objects as small as a word. The image of near objects does not focus adequately on the retina. Thus, the visual age of the learner may be an important determinant of the child's "organismic age," and we may have to give consideration to it in the planning of the pupil's reading program.

The ability to focus the eyes correctly during reading is part of the wider problem of motor coordination. For efficient reading the child must learn to coordinate the eyes, to move them along a line of print, and to make appropriate return sweeps. He must see clearly and distinctly both near and far, must be able to change focus and to fuse the impressions of each eye into a single image, and must have visual memory for what he has seen. He must be able to sustain visual concentration, must have good hand-eye coordination, and must be able to perceive accurately size and distance relationships (p. 91).³⁶

Even after children have become visually ready, numerous visual defects may occur. It is difficult to evaluate the specific effect of the various visual disturbances. The eyes can make amazing accommodations so words may be seen clearly. With the proper motivation the pupil may learn despite visual handicaps. He can ignore a distortion from one eye if he sees clearly with the other or if he adjusts his reading position to compensate. He may suppress the vision in one eye or alternate from one

* The basal metabolic rate is lowered by endocrine deficiencies. These also seem to be a factor in the inability to focus and in strabismus.

† See Smith and Dechant, *Psychology in Teaching Reading*, pp. 120-135.

eye to another. The result is monocular vision. Generally, however, for effective vision the child must be able to use his eyes in unison.

VISUAL ACUITY

Visual acuity does not seem to have the significance for reading achievement that some other visual factors have. First: Reading is a near-point task. One could fail the visual acuity test at 20 feet but possess good visual acuity at 16 inches. Second: To read the average book, one needs only 20/60 visual acuity.*

The emmetropic or normal eye sees with 100 per cent of acuity only a very small portion of the visual field, perhaps no more than four or five letters.¹⁴ Figure 3-1 shows this and indicates that the words and letters either to the right or left of this point are seen with ever decreasing clarity.

REFRACTIVE ERRORS

Refractive errors are due to damage to, disease of, or weakness in the lens or other portion of one or both eyes. Generally refractive errors can be corrected by glasses. Glasses, however, do not increase the sensitivity of the eyes. They help the eye to focus and lower eye strain but frequently fail to provide normal vision.

Myopia or nearsightedness is perhaps the most common among the refractive errors. The myopic eye is too long, with the result that the light rays come into focus in front of the retina. This forces the pupil to hold the book closer than the normal 16 inches or so. Distant vision generally is blurred. Usually concave lenses are prescribed for myopic conditions.

Eberl¹² believes that the child may become myopic through premature attempts to adapt his eyes to the demands of close vision. Perhaps even more important, she concludes that the child who cannot adjust through becoming myopic may avoid reading (and other near-point tasks) and turn to what for him are more pleasant activities.

Kosinski²⁶ suggests that myopia is symptomatic of a general weakness of connective tissue, which manifests itself also in hernias and varicose veins. The sweep in reading from the end of one line to the beginning of the next leads to congestion and pressure on the posterior pole of the eye,

* Snellen's formula is $V=d/D$. V represents visual acuity; d is the distance at which the person is reading the letters; and D is the distance at which the person should be reading (p. 84).⁴³ Thus 20/60 means that the person sees at 20 feet what he should see at 60 feet.

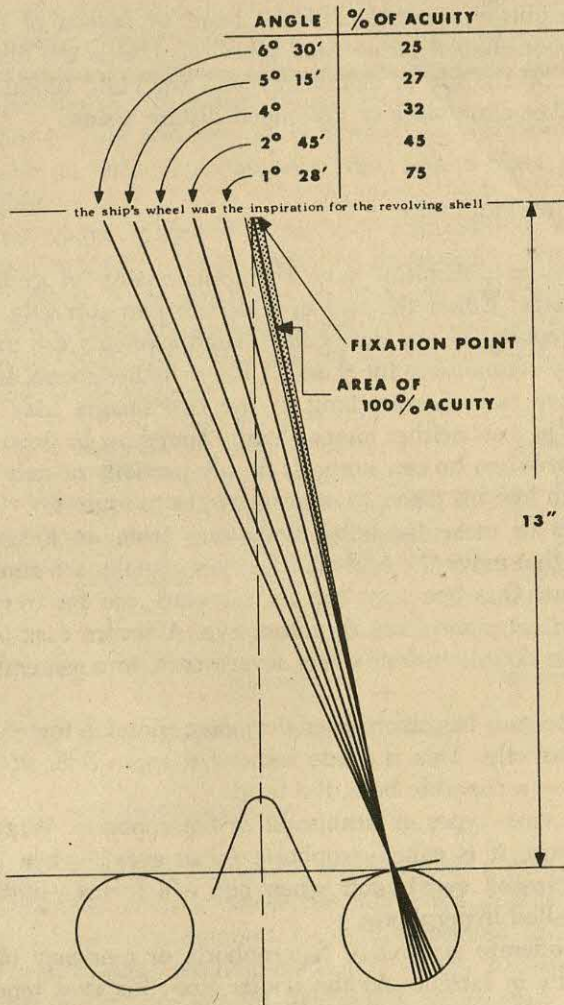


Figure 3-1. Visual Acuity *

causing it to become myopic. Mills²⁹ believes that hurried and excessive use of peripheral vision may be the causal factor.

Hyperopia or hypermetropia generally is known as farsightedness. Where the myopic eye is too long, the hyperopic eye is too short. In this case, the image falls behind the retina. To remedy this condition, convex lenses are prescribed.

Another type of refractive error, astigmatism, is the inability to bring the light rays to a single focal point. Vision is blurred. The underlying

* Stanford E. Taylor, *Speed Reading vs. Improved Reading Efficiency*. © 1962, Educational Developmental Laboratories, p. 11. Reproduced by permission.

cause is an uneven curvature of the front or cornea of the eye. The cornea is spoon-shaped rather than spherical. Unless the distorted image is corrected by the use of cylindrical lens, the child fatigues easily and usually dislikes close work or prolonged distant vision.

BINOCULAR DIFFICULTIES

The binocular difficulties have the commonality of giving the child a double image. Either the two eyes do not aim correctly or they give conflicting reports. When the ocular maladjustments are minor, the individual may compensate for them. If the maladjustments are major, the child may see two of everything or the two images may be so badly blurred that he sees neither image clearly. Somehow he needs to suppress one stimulus. When he can suppress it only partially or only temporarily, he is likely to lose his place, to omit words, or to regress.

Strabismus or muscular imbalance stems from an incoordination of the muscles that move the eyeball. The eyes actually are aiming in different directions. One eye aims too far outward, too far inward, or in a different vertical plane from the other eye. A severe case of strabismus may result in double vision; a less severe case, in a general blurring of the image.

Each of the eyes has six muscles that must function together if the eye is to aim correctly. This is made somewhat more difficult because the eyes are set in a movable base, the head.

There are three types of strabismus or heterophoria. When the deviation is outward, it is called exophoria (wall eyes); when it is inward, esophoria (crossed eyes); and when one eye focuses higher than the other, it is called hyperphoria.

Even a moderate amount of heterophoria or tendency of the eye to deviate results in fatigue. As the reader tires, his eyes tend to deviate even farther. Attempts to counteract this increase fatigue. A vicious circle is set up. The pupil becomes inattentive and irritable, loses his place, omits, and regresses. This incoordination is sometimes corrected by cutting some of the eye muscles.

Some research indicates that myopic children with phoric conditions read about as well as do children without phoria, but that children with phorias at far point have poorer reading skills.

Two additional binocular defects are lack of fusion and aniseikonia. To see clearly, the lenses of the two eyes must be in focus. The images must fuse correctly, thus giving one mental picture.

The light patterns focused on the retina generate nerve impulses that travel via the optic nerve and the visual pathways to the visual centers

of the brain. On the way, the impulses from the nasal side of each eye cross, thus joining the impulses from the temporal side of the opposite eye. Each cerebral hemisphere thus receives impulses from both eyes. These impulses are then blended into one picture.²

An inability to fuse correctly is manifested by mixing of letters and words, inability to follow lines across a page, loss of place, and by slowness in reading.

Aniseikonia occurs whenever there is a difference in size or shape between the two ocular images. As a result fusion is difficult and the reader may become tense, experience fatigue, and have headaches.

Figure 3-2 illustrates the various visual defects that are present among school children. Naturally, there are other visual defects, but the incidence of these is not as great.

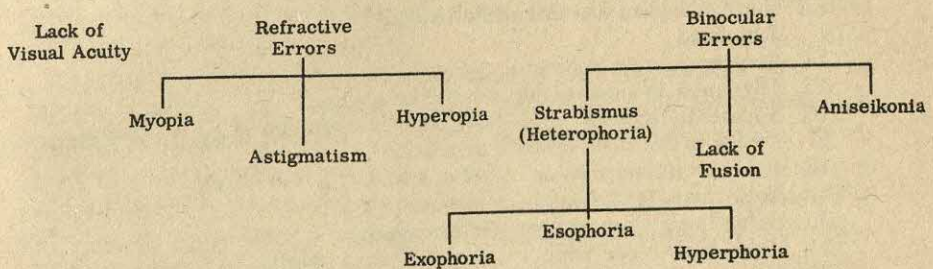


Figure 3-2. Visual Deficiencies

SYMPTOMS OF EYE DISTURBANCES

The teacher of reading cannot be satisfied with a general knowledge of eye defects. He needs to know the individual pupil's eye condition well enough to answer a number of specific questions (p. 163):⁴⁰ Does the pupil need special reading materials? When should he wear his glasses? Does he require special lighting? Can he read for prolonged periods of time?

The teacher frequently must seek help from a specialist. Perhaps the teacher's chief responsibility here is to be familiar with the symptoms of eye defects. A knowledge of these will help him to detect visual problems before they have become visual defects. He should be able to identify functional problems before they have become structural problems.

Bing² groups symptoms into: (1) avoidance symptoms, such as in the case of the child who shuns reading tasks; (2) behavior symptoms such as squinting, fatigue, or excessive blinking; and (3) complaints such as dizziness, blurring, or double vision.

The symptoms of visual difficulty are many. Knox (p. 98) ²⁵ categorized ninety-four symptoms and from these selected thirty that optometrists and ophthalmologists felt were significant. These are:

1. Inflammation, reddening, or thickening of the lids and watering of the eyes
2. Assumes poor sitting position
3. Attempts to brush away blur
4. Blinks eyes often
5. Changes distance at which book is held
6. Deviation in one eye
7. Drooping of upper lid
8. Excessive head movement while reading
9. Facial contortions: scowls, puckers forehead, squints, etc.
10. Forward thrusting of head
11. Rubs eyes often
12. Shuts or covers one eye while reading
13. Tilts head
14. Very restless or nervous
15. Alignment in penmanship unsatisfactory
16. Apparently guesses words from quick recognition of parts of words
17. Avoids as much close work as possible
18. Confuses letters such as *o* and *a*, *e* and *c*, *n* and *m*, etc.
19. Holds book far from face while reading
20. Holds book close to face while reading
21. Holds body tense while looking at distant objects
22. Is inattentive in reading lesson
23. Is inattentive during a group lesson on a chart, map, or blackboard
24. Makes errors when copying from board or works slowly while copying from the board
25. Reads smoothly and accurately at first, then jerkily and with errors
26. Skips words or lines while reading orally
27. Has tendency to reverse in reading, spelling, or arithmetic
28. Has tendency to lose place in reading
29. Is tense during close work
30. Tires quickly upon beginning to read or to do other close work *

Certainly the teacher should know these danger signs and look for them. Early detection of a child's visual difficulty may depend upon his alertness. The child's achievement in school generally is related to good vision. Good vision will mean more comfortable reading, and the child will develop favorable attitudes toward reading.

Teachers frequently are appalled by the poor concentration of some of their students. Unfortunately, in this instance "poor concentration" is not a good term. The pupil usually can concentrate, but it is on only one idea at a time. His attempt to maintain single vision or to clear blurred vision may prevent concentration on the mental task at hand.

* Gertrude E. Knox, "Classroom Symptoms of Visual Difficulty," *Clinical Studies in Reading: II, Supplementary Educational Monographs*, No. 77. Copyright 1953 by the University of Chicago. Reprinted by permission.

His cortical powers are directed entirely to the maintenance of basic visual skills.⁷ This same need for conscious control of the ocular factors may keep the child from reading as rapidly as he might.

EDUCATIONAL IMPLICATIONS

Eye defects of one sort or another are rather common. These defects increase throughout the grades and may play an important role in reading inadequacy. Good readers in the elementary grades generally have fewer visual defects than have poor readers. In high school and college—possibly because by high school many of those with poor vision have left school, and those who remain have adapted their scholastic approach to their reading deficiencies—there are few indications of visual differences between good and poor readers.

Generally, the incidence of myopia does not distinguish the good reader from the poor reader. In fact, myopia may be associated with better than normal progress. Although hyperopia seems to occur somewhat more frequently among poor readers (p. 7),⁸ the evidence certainly is not definitive. There also is a lack of agreement concerning the effect that astigmatism has on reading. It may be a handicap to successful reading when the learner has a severe case.

Failure of the eyes to coordinate, as in strabismus and in lack of fusion, and failure of the eyes to give images of the same size seem to have more serious impact on reading development. When the deviations are vertical, as when one eye focuses higher (hyperphoria), the reader frequently loses his place and fixates at a point either below or above the line on which he should be reading. He frequently complains of not understanding what he is reading. This condition appears to occur with equal frequency among both good and poor readers. When the deviations are lateral in nature, the convergence may be insufficient as in exophoria, or excessive as in cross eyes (esophoria). The former condition seems to occur more frequently among poor readers than does any other heterophoric condition. It leads to omissions, regressions, and loss of place.

Difficulties with fusion and aniseikonia also seem to be more common among poor readers than among good readers. Taylor⁴⁴ reports that a survey of some 2000 children with academic difficulties showed that 95 per cent of these lacked sufficient coordination and had difficulties with fusion. They failed to show the 13 to 19 diopters of convergence required to direct the eyes toward a single fixation point at 13 inches of reading distance while maintaining appropriate divergence or eye balance. Figure 3-3 illustrates the relationships involved.

Taylor adds that deficiencies in binocular control lead to inadequate word perception and the consumption of an excessive amount of energy

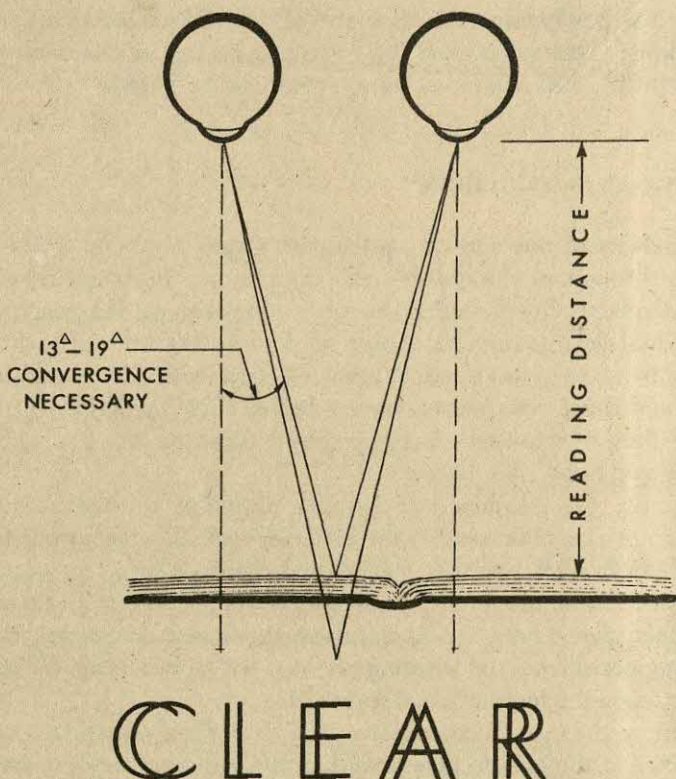


Figure 3-3. Binocular Control *

in maintaining single vision. The pupil will fatigue easily, experience distraction, poor comprehension, constant moving of the head, and difficulties in concentration.

Any interpretation of the relationship between visual defects and reading must consider the likelihood of multiple causation (p. 4).⁴¹ Some children are more sensitive to visual problems than are others. Some are able to perform well in short test periods and thus escape detection through the usual methods. In fact, some eye defects may not yet have been identified. We know far too little about the syndromes or patterns of reading defects generally. Eye defects frequently may be but one of a number of factors contributing to a reading deficiency. The simple fact is that some children with defective vision become good readers and that others without any visual difficulty do not learn to read. However, this does not indicate that good vision is unimportant to reading. Eye defects are a handicap to both good and poor readers.

* Stanford E. Taylor, *Speed Reading vs. Improved Reading Efficiency*. © 1962, Educational Developmental Laboratories, p. 9. Reproduced by permission.

Eames (pp. 30-31) ⁸ lists the following ways of helping children with visual difficulties:

1. Control the glare in the classroom by eliminating highly polished, glass-topped, or highly reflective surfaces.
2. While teaching do not stand directly in front of the light source.
3. Shield light sources so the light doesn't shine directly into children's eyes.
4. Arrange pupils in the classroom so that the light comes over the left shoulder of right-handed children and over the right shoulder of left-handed children.
5. Write on the blackboard in large letters at or slightly above the level of the children's eyes.
6. Use large-size materials—heavily printed charts and maps, large sheets of paper, sight-saving texts.
7. Seat children either near or away from the light depending on the nature of their visual difficulty: albinos prefer subdued illumination, amblyopic (dimmed vision) pupils prefer to sit near the window.
8. Provide pupils with ample rest periods.
9. Use only black and white materials with color blind pupils.
10. Do not try to change the eyedness of the pupil.*

Finally, teachers should learn to use various visual screening tests. In *Psychology in Teaching Reading* (p. 134) the more common ones were evaluated: the *Snellen Chart Test*, the *American Medical Association Rating Reading Card*, the *Keystone Visual Survey Test*, the *Eames Eye Test*, the *Jaeger Test*, the *Massachusetts Vision Test*, and the *Ortho-Rater Visual Efficiency Test*.

Recently Educational Developmental Laboratories has developed the *Reading Eye Camera*. This camera photographs on moving film small beads of light that are reflected from the eyes as the individual reads. It offers promise in measuring the pupil's ability to use his eyes in reading and in detecting functional visual difficulties.

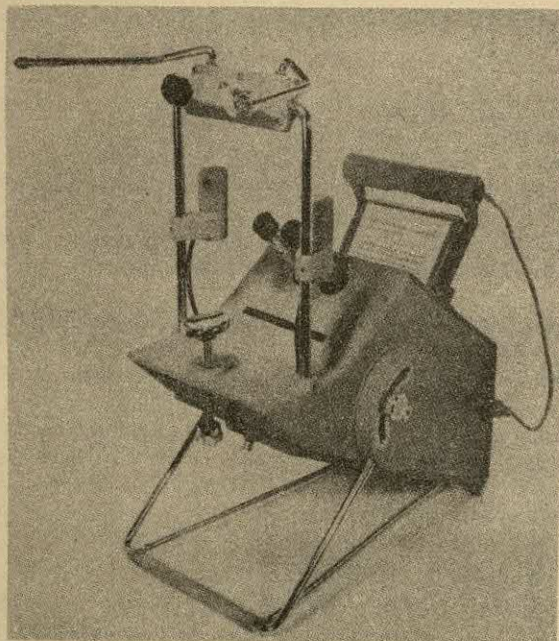
Perhaps of even greater importance for visual diagnosis and remediation is the *Prism Reader*. This device requires the eyes of the reader to diverge and converge to maintain binocular vision while reading.

Auditory Adequacy †

Auditory adequacy means three things: auditory acuity, auditory comprehension, and auditory discrimination.⁴⁷ The child must be able to transmit the sound waves from the external ear to the auditory centers of the brain. This is auditory acuity and may best be described as the recognition of the discrete units of sound.⁴⁷ He also must comprehend

* Thomas H. Eames, "Visual Handicaps to Reading," *Journal of Education*, 141 (February, 1959) 1-36. Paraphrased and reprinted by permission of the author and the *Journal of Education*, Boston University.

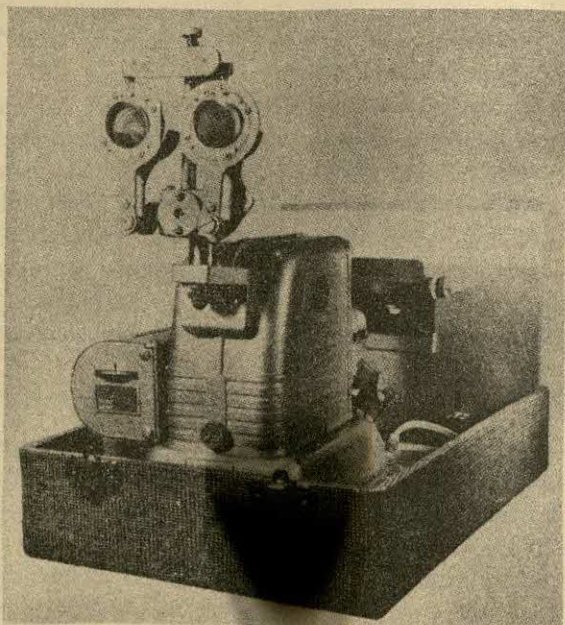
† See Smith and Dechant, *Psychology in Teaching Reading*, pp. 135-140.



*Reading Eye Camera **

*Prism Reader **

Perhaps of even greater importance for visual diagnosis and remediation is the *Prism Reader*. This device requires the eyes of the reader to diverge and converge to maintain binocular vision while reading.



* Courtesy of Educational Developmental Laboratories, Huntington, N. Y.

and interpret what he has heard, and, he must be able to discriminate and retain what he has heard.

Normal acuity is variously defined. Some believe that a hearing loss of as little as 6 decibels puts one in the hard-of-hearing group; others would put the cut-off point at 15 or more decibels. Because of this difference in definition, writers have reported percentages of hearing deficiencies ranging from 3 to 20 per cent. Generally, it is estimated to be about 5 per cent.

There are two types of hearing loss (pp. 296-297).³⁵ A conductive loss stems from an impairment in the conductive process in the middle ear. This reduces the child's hearing ability, but if the loudness of the sound is increased, the child hears and understands. A child with a conductive loss can hear his own voice through bone conduction. Thus, the voices of others sound much softer than his own. To compensate, he frequently speaks softly so his voice conforms to the voices of others around him.

Nerve loss stems from an impairment of the auditory nerve. A child with such a loss hears the speech of others but may not understand what he hears. The high-tone nerve loss prevents him from hearing and distinguishing certain speech sounds, especially such sounds as *f*, *v*, *s*, *z*, *sh*, *zh*, *th*, *t*, *d*, *p*, *b*, *k*, and *g*. The child's articulation generally is affected. He may speak too loudly or may develop monotony in his voice. He shows signs of frequently misunderstanding the teacher.

Studies generally have indicated that the ability to discriminate speech sounds is important for speech and reading development. Without it, children cannot isolate the separate sounds in words and thus find phonics training incomprehensible.

SYMPTOMS OF HEARING DEFICIENCIES

The hard-of-hearing child frequently is inattentive. He turns his head toward the speaker, cupping his hands behind his ears. He asks that questions be restated. At home, when he listens to the radio or the TV, the volume is exceptionally loud. Or, he may complain of ringing or buzzing in his ears.

EDUCATIONAL IMPLICATIONS

Loss of hearing can aggravate a reading deficiency. However, in seeking to understand the relationship between auditory deficiencies and reading disability, we again must remember that causes often are complex rather than simple, multiple rather than single. Auditory factors may be especially important when there is a severe hearing loss, when the specific hearing loss involves high-tone deafness, or when instruction

puts a premium on auditory factors. The exclusive use of the phonic method with a child who has suffered a hearing loss may prevent achievement in reading.

Retardation occurs much more frequently among children with defective hearing than among children with normal hearing. When the hearing defect is unilateral, achievement is not so adversely affected as when the hearing defects are bilateral. Deaf children are handicapped educationally much more than are the hard of hearing. Even low-level perception of sounds allows for most of those experiences that are essential to normal development in speech and language. Generally, as hearing loss increases, reading achievement becomes poorer.

The teacher cannot be satisfied, however, with the mere detection of auditory deficiencies.* He cannot do much about improving the child's auditory acuity. A hearing aid is much simpler. He can do much in developing the pupil's auditory discrimination skills. He must train the child in the awareness of sound, in making gross discriminations such as between the sounds of a bell and a horn, in making discriminations among simple speech patterns such as differences between vowels, and in the finer discriminations necessary for speech (p. 284).⁴ The latter involves the ability to distinguish the phonetic elements within words. Auditory discrimination and its development will be taken up again in more detail in Chapter 7.

The Brain and Reading †

Research by Gall, Dax, Broca, Jackson, Head, Wernicke, Goldstein, Halstead, Sherrington, and the Penfields have given us much information concerning the projection areas of the brain.† Figure 3-4 shows the auditory, visual, motor, somesthetic, and olfactory areas. Two fissures, the central and the Sylvian fissure, separate the brain into lobes. That part lying in front of the central and Sylvian fissure is known as the frontal lobe. The sense organs are connected with their special projection areas in the cortex, and the essential sensory processes occur there. An

* For a description of audiometers and other hearing tests, see Smith and Dechant, *Psychology in Teaching Reading*, p. 139.

† For a more complete discussion of the neurological bases of learning, see Eames (pp. 3-22)⁸ and Smith and Dechant, *Psychology in Teaching Reading*, pp. 160-175.

‡ Experimentation with animals tends to support Lashley's theory of equipotentiality. The rat, for example, does not seem to use any specific area of the brain for learning. Experiments with humans, however, supports Nielsen's thesis of cerebral localization. Thus, we speak of Exner's writing center, Wernicke's learning center, and Broca's speaking center. Pinpoint localization of brain functions is rarely possible. It is quite possible that injury to the same area in two different brains would produce different symptoms (p. 472).⁴⁸ In fact, some suggest that intellectual functions are functions of the brain as a whole. Recent research and experience with the brain-injured tend to refute this.

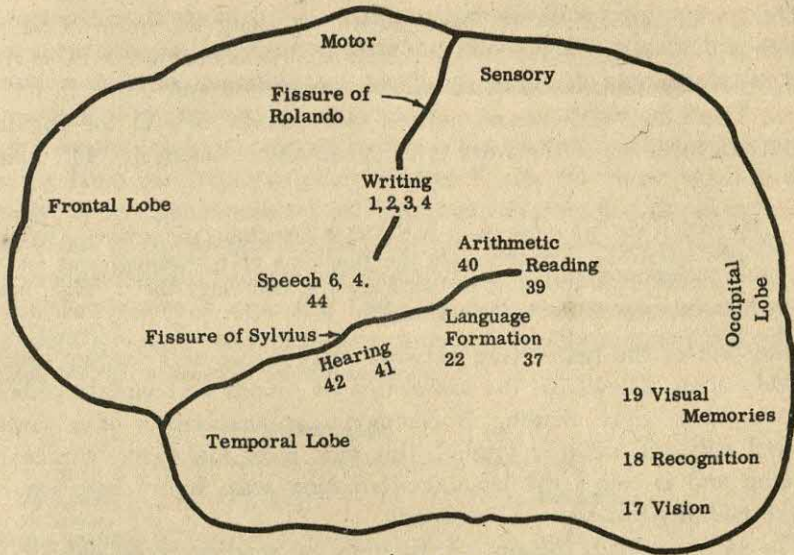


Figure 3-4. The Brain *

injury to the visual projection area, for example, may cause blindness.

The functions of the brain, however, are not restricted to the projection areas. More than three-fourths of the brain consists of association areas. The associations between the various sensory and motor areas are the result of learning.

When the child touches a burning match, a sharp signal of pain is received in the projection area. He avoids a burning match later, not because of the pain, but because he associates the pain with the sight of fire. To be meaningful, the experience of the present must be related to the experiences of the past. This occurs in the association areas. There the sensory and motor areas are united into the countless hookups and the "memory" of the past is preserved.¹⁵

Eames¹¹ notes that interferences with the frontal-occipital fasciculus affects auditory memory and creates difficulties in the learning of phonics. Other interferences in the association areas affect eye movement and eye span.

The visual projection area is surrounded by an association area known as the parastriate cortex. A second association area, known as the peristriate cortex, surrounds the parastriate cortex. If the parastriate cortex is injured, the person cannot recognize or identify what he sees. If the peristriate cortex is injured, the person may be able to recognize what he sees, but he cannot recall the appearance of objects when they are not in view.

* Thomas H. Eames, "Visual Handicaps to Reading," *Journal of Education*, 141, February 1959, p. 35. Reproduced by permission of the author and the *Journal of Education*.

The nerve impulse travels from the retina along the optic nerve to visual area 17 in the occipital lobe. This area is concerned with seeing without recognition. In areas 18 and 19 recognition and visual memory occur. There the words are recognized as words. In area 39, the angular gyrus, the meaning of the word is comprehended. Eames (p. 4)⁸ notes that

This part of the brain has to do with the *interpretation of symbols* (letters, words, syllables) and combines the functions of *recognition and visual memory* for word forms. It is well known in neurology that a lesion here will interfere with the ability to read.*

In the part of the brain lying between the hearing and reading areas, roughly areas 22 and 37, the association of sounds and visual symbols occurs. Thus, since reading is commonly an association of a visual symbol with an auditory symbol, this part is of major importance in reading and is called the language-formation area. Injury here results in the inability to name one's concepts.

The brain controls the rest of the body by sending commands, as it were, through a network of eighty-six major nerves that expand into thousands of smaller nerves. The nerves spread from the brain through the brain stem down the spinal cord. The nerves may be likened to miles of telephone wire; the brain, to a central switchboard. The impulses that travel through the neural network may be blocked by injuries along the neural path or by damage to the brain itself.

Neurological disorders affect perhaps twenty million persons in the United States (p. 4).³⁰ One in sixteen babies suffers some neurological injury; approximately 200,000 persons die yearly from strokes, and another million are disabled; † some eight million have brain or spinal cord diseases; about six million have hearing problems; a half million have Parkinson's disease; glaucoma, cataracts, and other blinding diseases claim a half million; and another half million suffer from cerebral palsy (p. 5).³⁰

WORDBLINDNESS

The term, wordblindness, traditionally has meant the inability to remember word forms. We use it here to mean any condition, whether

* Thomas H. Eames, "Visual Handicaps to Reading," *Journal of Education*, 141, (February 1959) 1-36. Reprinted by permission of the author and the Journal of Education, Boston University.

† Strokes are generally divided into five kinds (p. 12)³⁰: (1) hemorrhage, (2) thrombosis or blood clotting, (3) embolism or blocking of a blood vessel by a floating blood clot, (4) compression resulting from pressures such as a tumor, and (5) spasm or the closing or tightening of the walls of the artery.

permanent or temporary, that makes it impossible for the pupil to read. The condition may be either structural or functional in nature. It is called alexia if it is accompanied by structural defects in the cerebrum and dyslexia if it is functional in nature.

It is impossible to distinguish between the two forms of wordblindness on the basis of symptoms alone. Jensen²² uses the term "reading disability" to designate cases manifesting organic injury and the term "reading inability" to designate cases manifesting functional difficulties. If the disturbance is of functional origin, perhaps only reading is affected; if the disturbance is structural (delayed maturation or neural damage), the pupil's perceptual functioning is generally affected and difficulties will show up in areas other than reading.

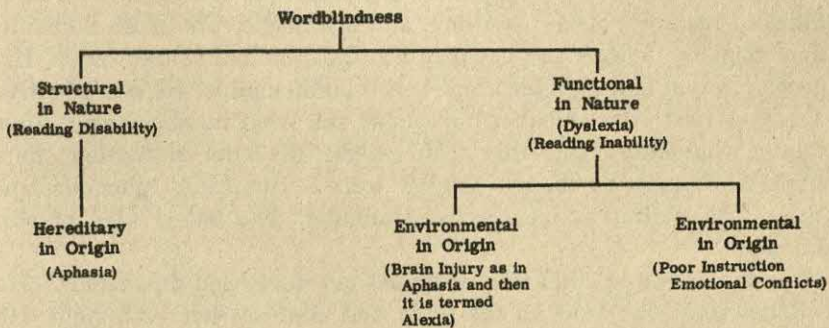


Figure 3-5. Wordblindness

Structural defects may either be the result of brain injury or they may be hereditary. The brain may suffer injury, or it may not develop adequately. The latter condition is known as aplasia. Microcephaly, mongoloidism, epilepsy, and mental retardation are symptoms of inadequate development.

Injuries to the brain are numerous. Cerebral tumors, infections, and changes accompanying old age may damage brain tissues. Tumors crowd brain tissues and restrict the metabolism of the nerve cells. Encephalitis and paresis are infections that damage brain tissue. Pick's disease, Alzheimer's disease, and arteriosclerosis are degenerative diseases that result in impaired functioning.

Finally, the brain may be damaged by certain metabolic disorders and toxins. Disordered chemistry may have serious effects on brain functioning. Enzyme, vitamin, and hormone deficiencies may lead to metabolic disturbances. Pellagra, for example, is caused by a vitamin deficiency. Cretinism is the result of an endocrine disturbance. Toxic conditions resulting from excessive intake of lead, alcohol, carbon monoxide, or opium

may damage brain tissue. High fever and lack of oxygen also may be injurious. A lack of oxygen, for even a few seconds, may lead to irreparable damage of brain cells. Increasing or decreasing significantly the sugar content of the blood may result in coma.

Aphasia is a form of injury frequently caused by stroke and is especially significant for reading. It may lead to a loss of speech but always results in a disturbance of the thought processes.

The aphasic or brain-injured child³¹ is hyperactive. He flits from one activity to another without apparent purpose or meaning. His behavior is compulsive, and the condition may be associated with difficulties in perception, memory, attention, and social control. Frequently, he is destructive.

A mild brain damage,³¹ frequently undetected, is associated with difficulties in reading (alexia), writing, and arithmetic. The child finds abstract thinking difficult and has poor coordination and concentration. His speech is rapid and mumbled and hence unintelligible. He can count to twenty or recite the alphabet but cannot tell what number comes after eight or what letter comes after *c*. He reverses the letters in writing, omits letters, and spells as though English were a completely phonetic language. The writing is cramped and angular. The letters vary in size and slant.

The brain-injured child frequently has not developed dominance.* He switches from one hand to the other and confuses left with right. He perseverates, repeating activities again and again.

Hirsch²⁰ suggests that generalized language disturbances frequently run in families and that they are associated with disturbances in body image, poor motor and visuo-motor patterning, inadequate figure-ground discriminations, and hyperactivity. Clumsiness in manipulation of small muscle groups (as in writing) is rather common. The execution in writing is jerky and arrhythmic. Hirsch notes that frequently the jerkiness in writing is accompanied by jerky, stumbling, and explosive speech (cluttering). The writing looks as the speech sounds. Drawings of the human form are immature and distorted. The limbs are out of proportion, incorrectly placed, or perhaps omitted. Finally, because of inadequate figure-ground discrimination, children with general language disabilities hear speech as an undifferentiated noise and see words on the printed page as an undifferentiated design. On more advanced levels (ten-fourteen years) these children will usually have difficulty in organizing what they read or study. In explaining the language-disturbance syndrome, Hirsch suggests that the underlying cause may be delayed or disorganized maturation of the neural system.

* Kephart¹⁸ differentiates between *laterality* (an awareness of two sides of the body) and *directionality* (ability to project this difference on external reality).

Harris¹⁸ notes that in reading disability cases exhibiting neurological defects the whole-part relationship is inadequate. Parts (letters) are seen as discrete units rather than as parts of a whole, and wholes (words) are seen as undifferentiated wholes. He also points out that frequently there is a figure-ground disturbance. The figure (word) does not have clear boundaries. The problem seems to become more acute when the figure is discontinuous or when the contrast with the ground is minimal. Harris raises the question whether word perception might be improved if the letters were continuous or if they were in a different color, perhaps red.

Harris also notes that laterality and directional orientation are usually delayed. Reading cases with a structural inadequacy frequently reverse in reading and writing (directional confusion).

Hinshelwood (p. 53)¹⁹ points out that any condition that reduces the number of cortical cells within the angular (area 39) and supramarginal (area 40) gyri of the left side of the cortex or that interferes with the supply of the blood to that area lowers the functional activity of that part of the brain, and will be accompanied by a diminished retention of the visual images of letters and words.

He (p. 102)¹⁹ felt that treatment for structural wordblindness consists in developing: (1) a visual memory for the letters of the alphabet; (2) an auditory memory for words by having the child spell aloud the word letter by letter; and (3) a visual memory for words.

Severely handicapped readers, however, need not always have suffered structural defects. For example, such conditions as inadequate instruction, emotional disturbances, lack of interest, or social incompetency may terminate in a reading problem.

CEREBRAL DOMINANCE *

A condition thought to be dependent on the development of the brain is cerebral dominance. This implies that one cerebral hemisphere is more important in behavior or functionally more efficient than the other. The left hemisphere commonly is the language hemisphere and for most individuals, since most of us are right-handed, it also is the dominant hemisphere.

There are, however, exceptions to this general rule. Some persons are left-handed (right dominance), some are ambidextrous with neither hemisphere being dominant (lack of dominance), and in others the dominance changes from activity to activity. The latter is termed crossed dominance and is seen in individuals exhibiting left-eyedness and right-handedness. Do these conditions hinder reading proficiency?

Orton³³ suggested that in learning to read the pupil develops memory

* See Smith and Dechant, *Psychology in Teaching Reading*, pp. 165-170.

traces from words both in the dominant (left for the average individual) and the nondominant (right) hemisphere, but that those in the nondominant hemisphere normally are mirror images of the former and thus are suppressed.* He adds that if cerebral dominance is well developed by the time reading begins, reading proficiency is not affected. If, however, no special dominance is developed or if the engrams or memory traces in the right hemisphere (left dominance) become active, reading difficulties occur, and the child will read once with a left and then with a right orientation.

In cases of lack of dominance (as in the ambidextrous person), the engrams of each hemisphere are equally dominant, and the reader may become confused and indecisive in his reading. He sometimes reads in a left-to-right direction and at other times reverses the direction (p. 13).¹⁰ Letters and words are reversed because the pupil sometimes uses the mirror images developed in the nondominant hemisphere.

Although Orton did not concern himself with the left-handed individual,† similar difficulties may arise. The left-handed person has a natural tendency to move from right to left in attacking words. And if he follows this natural tendency in reading, he will see little difference between the printed words and their mirror images. This results in reversals of words and word forms.

Unfortunately, it is not at all clear that reversals, confusion in orientation, and reading disability are related to lack of or left cerebral dominance. Dominance is not an either-or proposition; rather it is a matter of degree. To some degree everyone is two-handed, the embryo is completely symmetrical, and the development of a dominant hand is a gradual process. Ananiev (p. 31),³⁸ in an investigation of the dominant eye, dominant ear, and dominant hand, also found that a different member may be preferred for a different function.

However, poor readers, especially those showing up in reading clinics, generally show a greater frequency of undeveloped dominance. Harris (p. 254),¹⁶ for example, reports a high proportion of reading disability cases develop preference for one hand later than the age of nine. In a later study¹⁷ he suggests that if tests are sufficiently discriminative, genuine relationships between reading disability and laterality are found.

* Injury to the nondominant hemisphere usually does not lead to reading difficulties. Lindsley²⁸ found that the percentage of alpha waves out of phase between the cerebral hemispheres is greater among the ambidextrous than among those consistently right sided, thus substantiating Orton's theory of hemispheric conflict.

† In an eight-year study of handedness involving some 92,000 pupils in grades one through six, Enstrom¹³ found that the percentage of pupils writing with the left hand was 11.1. The percentage for boys was 12.5; for girls, 9.7. These percentages, higher than those reported in previous studies, were generally constant from grade to grade and suggest that fewer teachers are changing the handedness of the pupil.

Summary

This chapter has examined three broad factors that account for some of the differences in reading achievement: experiential background, intellectual development, and physical development. A knowledge of these factors alone is not enough to provide adequately for the pupil's reading needs. However, few of us would deny their importance.

This chapter should have cautioned us in the interpretation of reading failures. *Not all children can learn to read with ease.* Some children want to learn but attain little success. They are motivated; they are not lazy or indifferent. For some of these learning to read is difficult because they are handicapped intellectually, experientially, physically, or physiologically.

Teaching reading would be rather simple if the teacher knew exactly how to bring forth the desired responses from the pupil. Unfortunately, the same stimulus or teaching will elicit different reactions from different pupils and even from the same pupil at different times. Some explanations for variability in behavior have been stated in this chapter. In the following chapter we shall examine additional reasons why pupils are different and why they will behave differently in the classroom.

Questions for Discussion

1. State five basic principles of growth and development and point out how they apply in the teaching of reading.
2. Is it possible to raise all children's reading proficiency to the same level? Why?
3. Explain: "Many of the unexplained failures in reading may be the result of the child's failure to have a satisfactory relationship with the mother."
4. What is the advantage of a broad experiential background in reading?
5. What is the value of reading readiness programs?
6. Discuss the reasons for identifying, at least in a general way, the pupil's intellectual capacity and discuss the implications of this for the pupil's reading achievement.
7. If it is recommended that the pupil have a mental age of six for beginning reading and if intelligence test scores indicate that a given child's IQ is approximately 120, at what age would he be mentally ready for beginning reading? Are there any other considerations before actually beginning the teaching of reading?
8. Discuss the reasons for and against delaying reading instructions.
9. If children's intellectual aptitude scores range from 80 IQ to 120 IQ in grade 4, what are the implications for class instruction? In your answer discuss the use of basal readers, multi-level materials, grouping, and individualized reading approach.
10. What are some factors that must be carefully evaluated before one initiates a program of teaching five-year-old children to read?

11. Discuss visual adequacy and its implications for the developmental reading program.
12. Make an evaluation of the various visual screening tests.
13. Discuss the relationship between neural functioning and achievement in reading.
14. Elaborate on the statement: "Not all children can learn to read with ease."

Basic Reading Principles

1. Development in reading closely parallels and is an expression of the forces of human development generally.
2. The less adequate the prekindergarten experiences, the greater is the benefit of kindergarten training. (Prereadiness experiences are especially beneficial with children of lower socioeconomic families, with children who have foreign language backgrounds, and with the slow learner.)
3. Experience is related positively to reading readiness up to a certain point; beyond this point there are diminishing returns. (Moderate television viewing may aid readiness; excessive viewing hinders readiness.)
4. The greater the child's experience, the greater is his potential for taking meaning to the reading experience.
5. The most important reason for the difference between children's concepts and those of adults is the differential in experience.
6. The lower the intelligence quotient, the longer must be the period of readiness training before beginning reading. (The converse is not true. The highly intelligent child is not necessarily more ready for reading than is the less intelligent child. Highly intelligent children frequently need experience to give meaning to their verbalizations.)
7. Intelligence is not as significant a factor for determining readiness for learning to read as for predicting achievement in reading in later grades.
8. Mental age is not as significant for determining readiness for beginning reading as is ability in visual and auditory discrimination, but achievement in reading is a more direct function of intelligence than of auditory or visual discrimination.
9. A combined criterion of mental and physiological age is not a significantly better predictor of reading readiness than is mental age.
10. The poor reader is distinguished from the good reader by: (1) his inability to perceive the relationship to one another of the details within the total word shape or (2) his inability to perceive parts and details, in which case he perceives unanalyzable wholes. He is weak in the ability to analyze the visual and auditory structures of words and in the ability to synthesize phonetic units to form whole words.
11. Even minimal perception of sounds appears to allow for most of those experiences that are essential to normal speech and language development.
12. The greater the amount of energy the reader must expend in reading (because of physical inadequacies, for example), the less he tends to read.
13. Visual defects are more closely associated with poor reading achievement in the elementary grades than in high school and college.
14. Achievement is a greater function of perceptual and conceptual progress

- than of ocular mechanisms. (Good and poor readers seem about equally proficient in perceiving shape, form, and sounds.)
15. The mind (perceptual and cognitive processes), not sight, is the limiting factor in rate of recognition.
 16. The grosser the hearing defect, the greater the negative effect on achievement.
 17. Reading disability is related positively to left, the lack of, or crossed cerebral dominance.
 18. A forced change of handedness after reading has begun is positively related to poorer reading achievement.
 19. Reversals after the third grade tend to be associated with poor reading. (This is true whether they are interpreted as symptoms of left or crossed dominance or of spatial disorganization and figure-ground disturbances.)
 20. The more similar the symbols, the greater the tendency to reverse.

4 THE LEARNER (Continued)

Reading is a complex process. It is a composite of many skills, habits, and attitudes. The good reader possesses these qualities. To acquire them one needs a certain amount of readiness or proficiency in many related areas.

Chapter 3 emphasized the need for a wide background of experience, for adequacy in intellectual growth, for physical health, for visual and auditory adequacy, and for freedom from neurological defects. These are necessary conditions, but they do not assure success in reading. It is illogical to expect to produce a successful reader by promoting growth and development in only certain specifics. The teacher of reading must give consideration to all aspects of development.

Educators frequently overlook the child's *wholeness*. They have dealt separately with his intelligence, his physique, his emotions, and his social skills. Someone has suggested that if a child were to appear in the midst of a group of educational psychologists he would be a stranger to them. We sometimes forget that all aspects of the child's development are interrelated and that the child usually advances on an even front in all areas. And yet, it is easier to discuss the pupil's development by dissecting him as it were. Let us then continue to examine those factors about all pupils that have a bearing on their achievement in reading.

Social-Emotional Development

To help children both to develop adequate personalities and to become successful readers the teacher of reading needs to understand the facts, principles, and symptoms of social and emotional development of the child. He must be able to interpret pupil behavior. He must know how a child's social and emotional reactions influence his reading and how reading failure or success influences his emotional and social de-

velopment. He must be skilled in identifying those children whose behavior is consistently deviate.

Educators long have debated what the goals of the elementary school program are or should be. On one thing all are agreed. The child is the focal point of this program. In essence, educators believe that good education generally (and reading instruction in particular) should enhance the personal and social adjustment of the pupil.

Emotions are an important aspect of human development. Without emotional behavior life would be dull and personalities would be flat and uninteresting. Few individuals would achieve, for none could feel the joy of success or long for the esteem of others.

However, sometimes emotional development is maladjustive. Thus, studies show that the incidence of maladjustment among poor readers is greater than among good readers. It is not always easy to establish whether personality maladjustment is the cause, the effect, or a concomitant circumstance. Frequently it is impossible to tell whether emotional and/or social maladjustment causes reading failure, or whether reading failure causes maladjustment. Some studies have failed to find a positive correlation between reading failure and personality maladjustment. Not all emotionally disturbed pupils are poor readers, nor are all poor readers emotionally disturbed.

All children have physiological needs. They need water, food, sleep, and warmth to maintain their physical well-being. They also have psychological needs. They need to feel secure. They long for affection and for the friendship of others. They want the respect of others and go to extremes to win the esteem of their pals.

The child needs to perceive the law and order in the universe. He needs to learn to trust people. He needs to assert his own autonomy, to try out his initiative, and to accomplish. He needs to feel successful. He must know that he has done a good job, and that he is realizing his potentialities. His personality constantly seeks self-realization and self-actualization (p. 290).¹⁶

THE EARLY DEVELOPMENT OF CHILDREN

By the age of six the average child has already become a rather well-structured individual. He has learned to walk, can control his bowels and bladder, can dress and undress, and can feed himself. He ties his shoes, bathes, and brushes his teeth. He lives an orderly life, eating three times a day and sleeping a desirable number of hours.

He has become a member of his family. He identifies with his brothers and sisters and with his father and mother.

He is curious. He wants to know. He has developed his senses and

communicates in sentences. He discriminates, generalizes, and makes judgments. He generally accepts society's rules and can discriminate between right and wrong.

He wants things for himself, is egocentric, and has unbounded faith in rules. "It's not fair" are common words for the six-year-old. He tags along with the "gang" and by seven or eight would rather be with them than his family, but is still somewhat of an outsider looking in.

In the middle years of childhood the development started at an earlier age is continued. Social interest is developing. White²⁴ notes that three- and four-year-old children prefer to be with one or two companions. They do not like big crowds. By age seven children align themselves into groups, but these flounder without adult guidance. At nine the first unsupervised activities occur and it is common for one child to praise the accomplishments of another. Prior to that there are many criticisms of others and few compliments. Eleven- and twelve-year-old children are able to see others as they see themselves. They have some idea of why the other person does whatever he is doing. Friendship takes on new meaning. It is not mere interest in what another can do for the giver of friendship. Friendship is sought for its own sake. The person is concerned with doing something for the well-being of another.

Sex roles become rather clearly differentiated by age nine. The boy would not be caught crying (and so he develops an ulcer later in life). He will not be a sissy or a crybaby, nor will his father let him be. The girl has no such inhibitions. She is dainty and sweet but cries freely.

Jersild (p. 861)¹² has summarized the developmental patterns that characterize the transition from infancy to maturity. Children generally develop:

1. From helplessness to self-help with consequent reduction of frustration and fear.
2. From dependence on others to self-reliance.
3. From living in the immediate present to wider grasp of the past and future.
4. From parent-centered to peer-centered to a wide-ranging social interest.
5. From all-or-none emotional reactions to control over one's emotional responses.
6. From self-centered egotism toward satisfaction in sharing and giving.
7. From low frustration tolerance toward ability to endure tension and to function effectively despite anxiety.
8. From emotional attachment to parents to interest in the same sex during middle childhood to heterosexual responsiveness and love in adolescence and maturity.*

* Reprinted with permission from Arthur T. Jersild, "Emotional Development," *Manual of Child Psychology*, ed. by Leonard Carmichael. © 1954. John Wiley and Sons, Inc.

PERSONAL ADJUSTMENT AND READING ACHIEVEMENT

Even though developmental sequences are fairly uniform, the behavior differences among children are numerous. Some are egocentric and preoccupied with themselves. They are shy and timid and recoil from social interaction. Others plunge into social interaction with reckless abandon. They are alert and sensitive and reach out for the experiences around them. Some like to fight; others will never fight. Some lie and steal; some daydream or work too much. Some pay attention; others ignore everyone around them. Some are easily discouraged; others constantly show off in class. Some are unhappy, moody and quick tempered; others are quiet and contented just to be left alone. Some are cool and indifferent to reading, avoid it completely, and may actually learn to hate it. Others love to read and can't wait to tell another what they have read.

How can the teacher deal with these children? What has he learned from the normal development of children that can help him to plan for the proper personal development of the pupil? How can he deal with the anxious child, with the daydreamer, and with the exuberant one? How can he individualize the reading program so that it will meet each child's needs? How can he satisfy the child's basic psychological needs? How can he satisfy the child's need for accomplishment, for success, for self-realization?

There are no easy answers to these questions. Children vary in their behavior for many reasons, and to adjust the school program to meet the needs of each is practically an impossible task. There seems no ready solution to reading difficulties. Reading failure will perhaps always be with us. Failure of any kind makes the satisfaction of the child's needs rather difficult. It prohibits the actualization of his potentialities. It threatens especially self-esteem and the child's esteem in the eyes of others, thus thwarting both emotional and social adjustment. Failure in reading is a continuing block to normal development. For the poor reader, self-esteem and self-actualization rarely become a reality.

There is no adequate compensation for success in reading. In the academic work of today's school a child cannot succeed partially. He either succeeds or he doesn't, and without success in reading, success in almost any other area becomes an improbability, if not an impossibility.

Poor reading ability threatens social acceptance and thus leads to feelings of inadequacy. The pupil is subjected to bad publicity as it were. The poor reader is a child who has compared unfavorably with his peers. He has competed but has failed to meet competition. Such a child is humiliated and hurt. He becomes a social reject in his own mind and in the minds of others. He feels ashamed. He may become shy and withdrawn. He is thought to be "stupid," and even his parents may show dis-

couragement and dissatisfaction with him, for their egos have suffered. Their child has not measured up to *their* expectations.

It is not difficult to see why the poor reader, rejected by others and lacking the self-confidence that comes with success, should be tense, antagonistic, self-conscious, nervous, inattentive, defensive, discouraged, irritable, fearful, frustrated, defiant, indifferent, restless, and hypercritical. Unable to achieve recognition through success in reading, he may stutter, be truant, join gangs, and engage in destructive activity. He may show evidence of a psychological tic, of psychosomatic conditions, or of enuresis; he may bite his nails and suck his thumb.

Bettelheim (p. 392) ² notes that the poor student who fears failure, even if he does his best, frequently will protect himself by *deciding not to learn*. He convinces himself that he wants to fail rather than that he can't succeed. He begins to feel that he could do rather well if he wished. Bettelheim adds that this is an insidious process. The more the pupil falls behind academically, the more his pretense of adequacy is threatened and the more pronounced becomes his deviant behavior. The fourth grader might defy the teacher; by the eighth grade he defies police and society.

Research tends to indicate that most children come to school with rather well-adjusted personalities. Personal maladjustment seems more frequently to be an effect of rather than a cause of reading failure. However, in some cases, personal maladjustment seems to precipitate problems with reading. Educational malfunctions, most commonly those of reading, frequently signify emotional problems.

Harris ³ suggests that painful emotional events during early efforts at reading may turn the young learner against reading. The young reader may also at times transfer feelings of resistance from his mother to the teacher, or from his eating to his reading. A pupil may seek gang approval by not learning to read. Finally, he may exert so much energy in repressing hostile impulses that he has little left for intellectual effort.

There are numerous other factors of an emotional nature that may hinder success in learning generally. Difficulties in adjusting to a new environment make it impossible for the child to expend the energies needed for learning. Poor parent-child relationships, sibling rivalry, unfair comparisons with a neighborhood prodigy, lack of encouragement from the home, and negative attitudes of parents to learning in general may lead to failure.

The child may be afraid that he is "no good" and thus is sure that he cannot learn to read. Reading makes such a child feel "bad inside." Another child may be afraid of making mistakes. He doesn't want to be wrong because at home he has learned that it is "bad" to be wrong. A third child may look upon success in reading as a sign of growing up, and this is the last thing he wants to do.

Children literally punish themselves by not learning to read. They feel a deep sense of guilt and atone for it by receiving the reprimands that accompany failure. Others use failure as a way of punishing the adult. They demonstrate their independence by refusing to read. Their attitude is: "I'll show you."

The teacher must be slow in attributing the reading difficulties of even one child to emotional and/or social problems. Poor readers do not have an identifiable personality. Poor readers may be adjusted or maladjusted, they may run the gamut of personal deviation.

The relationship between reading disability and emotional and social maladjustment frequently is circular in nature. Early reading failure leads to maladjustment and personal maladjustment in turn prevents further growth in reading. It is quite conceivable that in certain cases reading failure and personal maladjustment have their own distinct causes. Generally, if the reading failure is emotional in nature, the child will have difficulties in other academic areas also. If the emotional problem was caused by failure in reading, the emotional difficulty is reduced when the child learns to read.*

Motivational Readiness †

Readiness for and achievement in reading are dependent also on the pupil's motivational readiness. Lack of interest is an important cause of poor reading. To achieve in reading the child must want to learn.

Children generally come to school wanting to learn to read. The reading teacher must foster this interest and expand it. He must locate those children who are not motivated to read. He must know how to further the interest of the child who wants to read. He also must be concerned with the type of reading materials that will encourage extensive reading and that will raise the child's general level of reading interests and tastes.

THE NATURE OF INTEREST

Interests arise through the interaction of our basic needs and the means we use to satisfy them. The child who is interested in reading is usually the child for whom reading satisfies the basic needs of self-esteem, esteem of others, curiosity, or the need for success and personal adequacy. Interests are the active forces that direct our attention to activities or objects. They determine whether the child will read, how much he will read, and in what area he will read. The average child is

* For a discussion of principles and procedures in dealing with reading disability cases who have emotional overtones, see Smith and Dechant, *Psychology in Teaching Reading*, (pp. 309-313).¹⁵

† See Smith and Dechant, *Psychology in Teaching Reading*, pp. 269-289.

actively seeking new experiences. His reaction to the world about him is selective. He chooses what he wants to experience and usually rejects those elements in which he is not interested.

As teachers, we are concerned with two phases of interest. First, the interest of the child somehow must be captured if he is to learn to read, and second, we must help the child to make reading an habitual activity.

As a person learns to read, reading enters his mental make-up as a permanent mode of behavior. . . . Henceforth he uses reading as a means of enjoyment and as a means of studying and thinking. To the extent that he can read with ease, reading is a major factor in the control of his behavior. He will often arrange his daily schedule of work and play in order to provide time for reading. He will make sacrifices in order to provide himself with books to read. He will turn to reading as a means of discovering new interests and of losing himself for a time from the actualities of the external world. It is at this point that we see the employment of advanced spontaneous attention. No longer is reading an end on the outside that conflicts with other tendencies. It is now a dominating interest that is within (pp. 57-58).^{*} 23

Indeed, it is at this point that reading acquires a motivational force of its own.

Our prime concern is that pupils do read. A reader is not a pupil who can read; he is a pupil who does read.¹⁸ The kindergarten teacher, especially, is more interested in fostering interest in reading than in developing specific reading skills. Although children come to school with an attitude favorable to reading, this attitude is not necessarily self-perpetuating. As children learn how to read, they must be directed to materials that appeal to their basic needs. By observing what a child reads, we may see what his special interests are. We then can provide him with reading materials appropriate not only to his intelligence and age but also to those broader interests that stem from his basic needs.

CHILDREN'S READING INTERESTS

Bettelheim (pp. 386-388)² notes that if teachers want to promote an interest in reading, they must let children read materials that are realistic. He points out that it is difficult to find children's stories that describe differences between parents or between parent and child; stories in which mother is not always willing to go for walks or to play with the child; stories in which children do not love the newborn baby; and yet, these are reality. The pupil reads "*run, run*" in the book, but must sit quietly at his desk. Thus, the reading program is built around pleasant experiences and may create unrealistic images of life and encourage reading that is pointless to the child.

^{*} H. G. Wheat, *Foundations of School Learning*. © 1955. (New York: Alfred A. Knopf Inc.). Reprinted by permission.

In *Psychology in Teaching Reading* (pp. 269-295), Smith and Dechant presented a summary of the significant research about children's interests. Let us here simply summarize the findings of this research.

Generally children prefer fictional materials to informational materials and prose to poetry. Their preferences for reading content show great variations and are influenced most by their age, sex, and intelligence. Girls read more than boys and before the age of eight or nine prefer the same content as boys. Interest in reading reaches a peak during the junior high years and then declines sharply.

Primary children like fairy tales, animal stories, nature stories, humorous tales, adventure stories, comics, and how-to-do-it books. Boys show special interest in animal stories; girls like stories with child characters.

Children in the intermediate grades are interested in adventure stories, animal stories, fantasies, in stories about family life, famous people, and children; they are interested in sports, humor, and in stories dealing with machines, personal problems, physical science, and social studies.²⁸ Boys generally are most interested in real-life adventure; girls prefer fantasy stories and those dealing with school, home, and personal problems. Comics become especially popular during this period.

In the junior high years boys prefer comic books, animal stories, western stories, adventure, fiction, humor, and biography; girls prefer fiction, comic books, animal stories, biography, and western stories.

On the high school level girls prefer romance, society, and fashion, but also read adventure, science, and mystery stories; boys like sports, adventure, mystery, action, exploration, travel, science, mechanics, and politics. Humorous books and books on hobby pursuits also are popular during this period.

We already have mentioned that intelligence is a major factor in determining what children will read. Generally, the areas of interest of more intelligent children are on a slightly higher level than are those of less intelligent children. Children with high IQ's read books that are more difficult and more adult. Intelligent boys (IQ 130 or more) read mystery stories, biographies, history, historical fiction, comics, scientific materials, sports, humor, and western; girls of above average intelligence read historical fiction, modern novels, biographies, mystery stories, teenage books, sports, animal stories, science, history, and books treating social problems.¹

The teacher must understand children's interests, but this is not enough. He must have more than a knowledge of the interests of children in general. He can never be certain that each child in his classroom has the same interests as does the "average" child. He must know the interests of each pupil and how these interests can be modified and developed.

Various inventories have been developed for finding out what interests

a child may have. Interest blanks or inventories are found in Harris (pp. 479, 482-483)¹⁰; Witty (pp. 302-307)²⁵; Dolch (pp. 444-446, 121-123); *^{4, 5} Witty and Kopel (pp. 185-188, 316-321)²⁶; Witty, Kopel, and Coomer²⁷; and Thorpe, Meyers and Sea.²¹

DEVELOPING INTERESTS

Children develop interests through learning, conscious or unconscious emulation, and identification. The child readily identifies with parents or individuals who take their place. He generally accepts their values and develops their interests. If the teacher is sincerely interested in reading, the child tends to incorporate this interest.

The development of interests is a lure and a ladder activity.⁴ The pupil must be lured to new interests through the ladder of suitable materials. The teacher must introduce the pupil to the appropriate reading materials in a way that motivates the student to action. The parent may help by providing a stimulating environment. Magazines, books, and story telling lure the child to reading. Television programs broaden present interests, increase vocabularies, encourage further reading, and generally help children to understand their environment.

The use of television to actually teach reading is open to serious debate. As Durrell⁶ points out, a book can be selected that closely fits the needs of a particular child, but television requires "all noses turned toward Mecca" at the same time. He suggests that television might be useful if for every two children there were one television set equipped with push buttons whereby the child might call forth the lesson needed and with other mechanisms that would reinforce correct performance and discourage incorrect performance. The greatest use for television perhaps is still for "enriching the intake of ideas."⁶

The teacher can promote interest in reading in numerous additional ways:

1. Read to children.
2. Develop charts to be placed on the reading table containing pupil-made jokes, riddles, statements, and stories. Other charts may contain famous sayings, a poem, or a list of words.
3. Provide a wide selection of easy reading materials.
4. Help each child to find materials of appropriate content and difficulty. Do not emphasize literary content only. Generally, the content should provide adventure, action, humor, romance (for girls), and surprise. The stories should be about children and heroes.
5. Use book exhibits, book fairs, book advertisements, periodicals, and

* Dolch reproduces an inventory from Witty and Kopel.²⁶

bulletins to stimulate interest in reading. Provide books to fit children's immediate interest.

6. Give children an opportunity to share their reading experiences through book reports, panels, or round-table discussions.
7. Develop a book club or hobby club. Choose a "Book of the Week." Devote an assembly to a particular author or invite a favorite author to school.
8. Introduce children to the reading topic by illustrating the content with T.V., films, recordings, and other audio-visual aids. Give an introduction to the book to create interest. Whet their curiosity.
9. Provide class time for library reading.
10. Let children read more than one version of a biography.
11. Stay in the background. The pupil's recommendation of a book carries more weight than the recommendation of ten teachers.
12. Recommend the sports page, magazines, or even the comics to children who do not read.
13. Let the pupil keep a record of his own progress of the books that he has read, of the books that he would like to read, and of the movies he has seen that are based on books.

The teacher cannot ignore the interests of children, nor can he always feed the pupil only what he likes. He must stimulate the child to acquire tastes and to increase the variety of his interest. Harris (p. 491)¹⁰ makes a pertinent observation:

Children do not develop discrimination by being allowed contact only with superior reading matter; on the contrary, it is often found that the brightest children and most voracious readers read much that is of a trashy nature, as well as much that is good. Taste develops through comparison and contrast, not from ignorance.*

DEVELOPING READING TASTES

It is frequently an observation that many children do not read, that the quality of what some read is inadequate, and that schools are not developing a permanent interest in reading in many pupils.

The teacher can remedy this situation. First: He must use his understanding of the pupil to help the pupil choose books that will lead him to a higher level of appreciation. It is not enough to know that the book does not positively "harm" the child. The teacher must encourage the pupil to read books that make a positive contribution to his cultural, social, and ethical development. Second: He must be well acquainted

* Albert J. Harris, *How To Increase Reading Ability*, © 1956, Longmans, Greene and Company. Reprinted with permission, courtesy of David McKay Company, Inc.

with the books that he recommends to the pupil. When he suggests a book to a child, he must have the conviction that the content and the style will motivate him to read it. Third: He must know the specific interests of each child. If he is to help the pupil to develop reading tastes, he must consider the pupil's interest patterns, his voluntary reading, the availability of materials, and the time that he has for leisure reading. He must also know the level of the pupil's reading abilities. He cannot nurture pupil interest with books too difficult to be read easily.

AN OBSERVATION

Where there is behavior, there is motivation. Human beings generally act to satisfy physiological and psychological needs. The child normally learns to read to satisfy his need for self-esteem. When reading is thus associated with need-satisfaction, reading becomes a meaningful activity. Repetition of this activity leads to the development of a lasting interest in reading *per se*. At this stage reading becomes a habit motive and may motivate other activity. The child will then seek a reading activity (for interest directs attention) and, to the degree that reading challenges his mind, he will have acquired the major by-product of interest. He will be able to concentrate.

Sex and Readiness *

Teachers have always been concerned with differences in achievement among boys and girls. One of the more obvious differences is in readiness for and achievement in reading. Girls as a group achieve better than boys in reading. They learn to read earlier, and fewer of them are significantly retarded in reading. They generally seem to perform better than boys in English usage, spelling, and handwriting.

Girls and boys exhibit differences also in other areas. For example, the incidence of stuttering is substantially greater among boys. Boys also tend to lisp and lall more. † Girls tend to be better than boys in auditory and visual discrimination. The incidence of left-handedness, ambidexterity, and high frequency hearing loss is greater among boys.

Numerous attempts have been made to explain the differences in reading achievement. In general, the explanations have emphasized either hereditary or environmental factors. It has been suggested that girls have an inherited language advantage or that they reach maturity about a year and a half earlier than boys. Some writers suggest that today's schools are more fitted to the needs of girls. Most of the teachers

* See Smith and Dechant, *Psychology in Teaching Reading*, pp. 91-95.

† The laller substitutes an easier sound for a more difficult one. For example, instead of pronouncing robin as robin, he makes it "lobbin" or "wobbin."

are women and they adjust more easily to girls than to boys. Furthermore, teaching methods frequently may be more suited to the needs of girls than to those of boys. Studies also indicate that girls are promoted on lower standards and that both men and women teachers tend to overrate the achievement of girls and to underrate the achievement of boys.

The expectations of society require boys and girls to play distinctly different roles. Girls are supposed to be good, feminine, and to achieve in school. On the other hand, boys are expected to be active and to excel in sports rather than in books. Girls, in addition, before coming to school engage in numerous activities that may better prepare them for reading. In their weaving, sewing, and doll playing they have more opportunity to develop near vision and motor coordination (p. 27).¹⁰ Girls use reading more frequently for recreation than do boys. Reading materials generally are more in accordance with the interests of girls.

Certainly, not all reading disability cases are referred to the reading clinic. And of those who are referred not all of them may be referred for reading disability alone. It is quite possible that boys more frequently than girls tend to manifest their reading problems through aggressive tendencies, and as a result more of them are referred to the clinic. The reading problems of well-behaved girls may go undetected, or may be taken care of in the classroom (p. 114).²²

Studies generally have found that intelligence is more variable among boys than among girls. It may be that the reading ability of boys also is more variable, giving rise to a larger number of boys who are poor readers (p. 112).²²

A comparative study¹⁴ of reading in Germany and the United States reveals that the mean reading scores of fourth- and sixth-grade German boys exceed those of German girls and that the variability of scores is greater among the girls than among the boys. These findings are just the reverse of those in this country and suggest that sex differences may best be explained by cultural and environmental factors. It is interesting to note that the teaching staffs in Germany, even in elementary school, are predominantly male.

That there are sex differences in readiness and reading achievement in favor of the girls in this country can hardly be questioned. There also are vast differences among boys themselves and, many six-year-old boys are more mature than the average six-year-old girl. What educational implications do these differences have. Two educational recommendations have been based on these differences. Some have suggested that boys begin first grade later than girls, others have suggested that separate mental age norms be devised for girls and boys.

In an attempt to evaluate these recommendations Clark³ investigated sex differences in mental ability and achievement. His study is particularly significant because: (1) eight measures of mental ability and six

measures of achievement were used; (2) the study involved third, fifth, and eighth grades; (3) he used a nation-wide sample; (4) he used statistical controls in his analysis of differences in mental ability between boys and girls, so that the effects of variations in age were eliminated; (5) in his analysis of achievement differences between girls and boys the effects of variations in both age and mental ability were controlled.

The data indicated that intelligence as measured by the *California Test of Mental Maturity* is independent of sex. No significant differences were found between the sexes in reading vocabulary, reading comprehension, and arithmetic reasoning. In mechanics of English, however, the fifth- and eighth-grade girls did better than the boys. In spelling, the girls had better scores at all three grade levels. Thus, even when differences that are attributable to age and mental age are held constant, the girls still excelled in spelling and English mechanics.

Clark concludes that: (1) Sex differences in intelligence are non-existent; (2) Since there were no differences in arithmetic and reading, the differences that are so noticeable in actual classroom conditions are attributable to environmental factors such as interest; (3) Girls have a definite advantage in English and spelling; and (4) Since a great variability in ability and achievement exists at all grade levels, educational decisions must give first consideration to the individuality of each pupil.

Educational provisions must ultimately be for the individual pupil. It is not enough to know what is best for the group. It is not enough to know what type of reading program would benefit most boys or girls. The teacher must prescribe for the individual boy and girl, and as soon as he attempts this, he realizes that differences between boys and girls and between one boy and another—differences other than sex—play a significant role in reading achievement.

Instructional Inadequacies

The instructional inadequacies sometimes evident in the teaching of reading are variables of achievement that need to be evaluated. The child's readiness for reading and the level of achievement that he will attain in reading depend on his background of experience, his intellectual, physical, emotional, and social development, *and the instructional program he receives*. For some instructional programs, the child may not be ready until the age of seven; for others, he may be ready at the age of five.

Poor teaching may be one of the major causes of reading disability, or of lack of achievement in reading. Poor teaching is no less a handicap than is poor vision. It may even be true that reading disability cases are sometimes not understood because we have not looked in the right place.

It is considerably easier to suggest multiple causality than to admit that our instruction has been inadequate (p. 120).²⁰

Instruction may be inadequate because it is not adapted to the individual child, because it is unsystematic, because the teacher does not emphasize the basic skills, or because the teacher uses a single method exclusively.

INADEQUACY OF INSTRUCTIONAL MATERIALS

Inadequacy of instructional materials is almost as serious as inadequacy in instruction. The classroom must be equipped with a variety of books and materials. For example, the kindergarten classroom must contain readiness workbooks, picture books, picture dictionaries, phonic games, preprimers, and primers. The teacher needs a hand printing set, oak tag, charts, labels, and signs. He should have at his disposal recordings, film strips, films, a radio, opaque projectors, and a television set. The classroom should be equipped with easels, paint brushes, finger paints, sand-boxes, aprons, clay, oilcloth covers, cutting tools, blocks, beads, puzzles, and other concrete materials to broaden children's experiences.

Chapter 14 gives a listing of commercialized materials available to the reading teacher and also discusses the readability of materials.

TEACHING METHODS

The teaching technique also must be appropriate to the child and to the nature of what is taught. The child must be given a firm foundation in fundamentals. Efficient work habits must be encouraged from the start. The reading readiness of each child must be determined. Drill on words out of context, on speed, and on word analysis should not be over-emphasized, but it cannot be ignored. Reading for meaning must be stressed, but not to the exclusion of word identification and recognition.

The beginning reading teacher needs to be aware of numerous fallacies concerning reading methods. The following are some pertinent examples:

1. Learning the letters of the alphabet is a handicap to successful learning of reading (p. 70).²⁰
2. Learning to read and reading by a mature individual are the same process and involve the same factors. Because the letter is not the meaningful unit of perception in reading, it therefore cannot be the initial step in learning to read (pp. 70-73).²⁰
3. With the right method *every* child can learn to read. And, there is but *one* right method of teaching reading (p. ix, p. 36, pp. 93-98).²⁰
4. Every phonically-trained child necessarily is a word-caller. Indeed the child of very low IQ may become a word-caller because it is easier for him to learn to pronounce words than to learn and remember word meanings (pp. 101-102).²⁰

5. The reading readiness program exists *only* because present methods of teaching reading are so slow and so unsuccessful that we must justify our delaying of formal reading instruction until the child can be more successful with it. And it protects the teacher when certain children make no progress through the first grade (pp. 103-104).²⁰
6. Whenever our "favorite" method doesn't work, it must have been taught improperly.
7. The phonics approach interferes with the child's ability to take meaning to and from the printed page and keeps him from thinking with the material (p. 111, p. 13).^{20, 29}
8. Phonics is best taught incidentally. It should be introduced only after the child has learned a certain number of words by sight to help him to read words with which he has difficulty (p. 114).²⁰
9. The phonics approach is wrong because phonically-trained children do not read as rapidly nor as fluently as analytically-trained children. This may be true of beginning readers, but does drilling children to handle very rapidly a small, controlled vocabulary in grade one necessarily guarantee that they will be able to handle longer and less-controlled vocabularies in the sixth grade?
10. The whole-word method is completely visual, and the phonic method is completely auditory.¹¹
11. Drill in phonics will cause children to dislike reading.
12. Children learning to read by the sight method will develop a permanent interest in reading.
13. The developmental reading program prohibits children from exploring and broadening their interests. (The individualized reading program is thought to allow children this opportunity.)
14. The so-called "contextual reader" is the best reader. As Nelson¹³ points out, the boy who reads "war" for the word "battle" because it makes sense in the sentence is not necessarily a better reader than the pupil who reads "bottle." The former simply guessed at the word; the latter was actually reading even though he confused the *a* with the *o*.
15. Practice alone will help the pupil to improve. Some proponents of the individualized approach seem to be falling into this error. Their admonition to the pupil at times sounds like this: "Mary, you are not ready to read to me yet. Go and practice some more."
16. The controlled vocabulary in the basal series is more insipid than the vocabulary used in phonic materials.

INCIDENCE OF READING RETARDATION

This list of fallacies is just an example of the erroneous ideas existent in reading today. Teachers cannot close their eyes to the fact that some present-day practices are based on them. They cannot ignore this situation because there are still far too many children who are not learning to read as well as they might.

In the city of New York, for example, 4000 seventh graders were retained in 1958 because they were reading at or below fourth-grade level (p. 5).¹⁹ Foster⁷ reports that in the Phoenix, Arizona high schools out of 1106

entering freshman tested, 21.4 per cent had a reading ability of fifth grade or lower and 34 per cent could not read at the seventh grade level.

Unfortunately, the problem is not entirely the teacher's fault. Some 25 per cent of the teacher-training institutions do not require special preparation in reading and only nine state certification agencies require elementary teachers to have completed a course in reading.¹⁷

OTHER FACTORS

Of course, not all reading disabilities are the direct result of poor teaching. In this and the previous chapter we have discussed many other factors. Here are some others: poor attendance, frequent changing of teachers and schools, too-large classes, poorly organized reading programs, inadequate promotion and retention policies, teacher shortages, inadequately prepared teachers, frequent interruptions of class periods, and extraneous activities required of teachers. Asking teachers to collect money, to supervise playgrounds, and to sponsor student and community activities saps the energy required for successful teaching.

Summary

In Chapters 3 and 4 we have examined numerous factors that have a bearing on the pupil's readiness for achievement in reading. The teacher cannot ignore them. To help the child most he must have a clear understanding of each factor.

It is impossible for the teacher to remember all these data about each child without some way for simplifying them. Thus, reading texts generally have presented a readiness chart, on the basis of which the teacher can rate the child's readiness for reading. The following chart is based on the data discussed in this and the previous chapter and may well be considered a summary of them.

The teacher of reading must know his subject matter. The task variables, the things to be learned, are important determinants of reading success. The pupil must be able to recognize the printed symbol and to associate meaning with it. The teacher must promote the development of word recognition and meaning skills. The teacher must understand the reading process.

However, this is not enough. He also must understand the individual variables. He must understand the nature of the learner. This has been the import of the last two chapters. It comprises the major content of *Psychology in Teaching Reading*. The child's development in reading is dependent upon all the other interrelated aspects of his total develop-

READING READINESS CHART

Name Sex

Age in years and months

IQ MA Reading Readiness Score.

Estimates of the Child's Development

1 2 3 4 5 *

1. Background of Previous Experience

- (a) Has attended kindergarten †
- (b) Has a foreign language background
- (c) Is from a low-level socioeconomic home
- (d) Is intellectually dull-normal

2. General Mental Development

- (a) Perceives likeness and differences
- (b) Remembers word forms
- (c) Has appropriate memory and attention span
- (d) Thinks clearly and in sequence
- (e) Can express his thoughts in his own words
- (f) Associates symbols with pictures, objects, or facts
- (g) Sees the relationship of the part to the whole
- (h) Can think on an abstract level

3. General Language Development

- (a) Has appropriate vocabulary for his age
- (b) Enunciates clearly
- (c) Articulates clearly
- (d) Pronounces words accurately
- (e) Expresses himself clearly to others
- (f) Is sensitive to sentence structure
- (g) Talks in simple sentences
- (h) Understands that what can be said also can be written

4. General Physical and Physiological Development

- (a) Has sufficient visual acuity

* We have used the same rating system as Gray (p. 126) ⁸ for the six major headings: Namely 1 = well below average; 2 = below average; 3 = average; 4 = above average; and 5 = well above average. These ratings are dependent on the answers made to the subdivisions of each major grouping.

† The answers to the subdivisions should be *yes* or *no* answers.

- (b) Manifests refractive errors: myopia, hyperopia, astigmatism
 - (c) His eyes aim in different directions
 - (d) His eyes are not in focus
 - (e) The visual images are different in shape and size
 - (f) Has a conductive hearing loss
 - (g) Has a high tone hearing loss
 - (h) Has good health
 - (i) Has suffered a neurological injury
 - (j) Has clearly developed dominance
 - (k) Has clearly developed eye-preference
 - (l) Makes reversals in speech, reading, and/or writing
 - (m) Has been converted from left to right-handedness
5. Motivational, Emotional, and Social Development
- (a) Is interested in learning to read
 - (b) Is interested in books
 - (c) Is interested in interpreting pictures and printed symbols
 - (d) Is curious about the shapes of words
 - (e) Works well with a group
 - (f) Is responsive to instruction
 - (g) Has a feeling of adequacy and belonging
 - (h) Has learned to help himself
 - (i) Has developed some tolerance for failure
 - (j) Exhibits a normal amount of self-confidence
6. Educational Development
- (a) Can concentrate on or attend to learning activities
 - (b) Can follow directions
 - (c) Instructional materials are adequate
 - (d) Has had training in efficient work habits
 - (e) Has attended regularly
 - (f) Has changed schools

ment. Each child's development is different and so is his achievement in reading. Only by knowing each pupil can the teacher base his educational decisions on a psychology of individual differences.

The following anecdote will help to illustrate this point. A little boy was sitting on the floor and was trying to assemble a jigsaw puzzle. As his father passed him, the father noticed his plight and informed him that he would be back shortly to help him. When he returned, the amazed father saw that the puzzle had been completed.

"How did you get it?" he inquired. To which his son replied: "Daddy, I looked at the box and I saw what it was supposed to be. It was a picture of a boy surrounded by the world. I first got the boy and when I got him right the rest was easy."

So it is in reading. If we get the boy right, the rest of the teaching tasks fall imperceptibly into place. Good education must begin with a knowledge of the child.

Questions for Discussion

1. What is the parent's role in the socialization of the infant?
2. What is the teacher's role in socializing the pupil?
3. What are some of the defense mechanisms used by the child to protect himself from reading failure?
4. Discuss five significant activities through which the teacher can develop an interest in reading.
5. Explain the interrelationship of motives, needs, meaning, interest, habit, and concentration.
6. Explain the concept "wholeness" or the meaning of such phrases as "The whole child goes to school" or "The whole child reads."
7. In two parallel columns list conditions under which reading failure leads to personal maladjustment and when personal maladjustment leads to reading failure.
8. What are the arguments for presenting real life situations in children's reading materials? What arguments may be advanced against presenting them?
9. Study, analyze, and evaluate one recognized interest inventory. What place does it have in the reading program?
10. Discuss the implications of five fallacies in reading upon the instructional program in the school.

Basic Reading Principles

1. The tendency to read (sEr) is a function of habit strength (sHr), of drive (motivation) (D), of the intensity of the stimulus (V), of incentive motivation (reinforcement) (K), and of delay of reinforcement (J).^{*}
2. The more reading the child does, the greater is the tendency to engage in additional reading. Genuine interest in reading is developed through actual reading.
3. The more reading satisfies personal motives, the greater is the tendency to read. To get a child to read put reading between a child and the goal he is seeking to attain.
4. The more interesting reading becomes and thus the closer it comes to being a motive in its own right, the greater is the tendency to read.
5. The greater the reinforcement value of reading, the greater is the tendency to read on subsequent occasions.
6. The closer reinforcement follows actual reading, the greater is the tendency to read. Children strive toward goals that are close at hand.
7. The effective tendency to read (sEr) is equal to the total tendency to read (sEr) minus the inhibitory factors (Ir) that tend to block performance. Among the inhibitory factors are health, fatigue, amount of energy needed for reading, and the number of unreinforced reading experiences.
8. The greater the amount of energy the reader must expend in reading, the less he tends to read. (The more difficult the materials, the quicker the student becomes fatigued.)

^{*} The symbolism in the parentheses is from Clark Hull, *Principles of Behavior*. The parallelism between some of these statements and Hull's theory is readily apparent.

9. The more frequently reading is unrewarded, the less the student tends to read. (The student who reads but does not understand tends to lose his interest in reading.)
10. There is variability (sOr) in an organism's effective reaction potential, or tendency to respond through reading. Because of this Hull speaks of an organism's momentary effective reaction potential (sEr). This is equivalent to the effective reaction potential (sEr) with allowance for variability (sOr). A child may be able to give the meaning of a word 99 out of 100 times, but occasionally he cannot do so. On certain days a child may not care to read, regardless of the fact that the class schedule calls for reading.
11. A neutral stimulus, such as reading, that is constantly associated with the diminution and satisfaction of basic motives takes on drive or motivation value in its own right.
12. Up to a certain point learning to read is an increasing function of motivation; excessive motivation may hinder learning and create anxiety.
13. Intrinsic motivation (to satisfy basic needs) is a stronger motivator of learning than is extrinsic motivation (punishment).
14. The more directly learning to read satisfies basic needs, the more readily reading is learned and the greater is its valence value. Reading becomes an interest in its own right.
15. Motivation is a decreasing function of massed practice. (Massed practice tends to lead to fatigue.)
16. Learning to read is a function of the understanding of "what goes with what." (Meaningful materials and meaningful tasks are learned more readily than are tasks that are not understood by the learner.)
17. Interest in reading is more directly a function of learning than of inheritance.
18. Socioeconomic status is more closely related to a child's general interest in reading than to a child's interest in a specific reading theme or content.
19. High intelligence is associated with higher level of interest; children over twelve with high IQ's tend to read adult materials and show a more varied interest pattern than do children of low IQ's.
20. Television may either raise or lower reading tastes by interesting the child in materials of high or low taste.
21. Personal maladjustment will not necessarily be reflected in poor reading achievement.
22. The more intense the emotional problem, the more achievement depends on individual instruction.
23. The greater the intensity of the personal difficulty, the less effective remedial reading tends to be and the greater is the need for therapy.
24. The more emotionally disturbed the child, the less are the reading gains from therapy and remedial reading.
25. Personal maladjustment seems more frequently to be an effect of rather than a cause of reading failure.
26. If the reading failure is emotional in nature, the child will have difficulties in other academic areas also.
27. If the emotional problem was caused by failure in reading, the emotional difficulty is reduced when the child learns to read.

Part Three



DEVELOPING READINESS FOR READING

Part Three attempts to outline a program for developing reading readiness. It is not enough for the teacher to know what promotes or hinders reading readiness; he must know how to develop it.

Chapter 5, entitled, "Reading—A Language Experience" and Chapter 6, entitled, "Developing Language Readiness," lay the foundation for subsequent chapters. They are concerned with the nature of communication, with the meaning of language, with the significance of communication and language for the reading process generally and for reading readiness specifically, and with development of language readiness. The general assumption underlying the chapters is this: the first step in introducing the child to reading is to provide him with an adequate development in listening and speaking.

Chapters 3 and 4 emphasized the physical-psychological development of the child. Chapters 5 and 6 give primary consideration to the child's language development.

Reading instruction is more than psychological guidance. Sociological, neurological, physical, and psychological conditions do indeed produce many reading problems, but the misunderstanding of the relationship between the printed and spoken language may lead to many more.

In our language, reading requires the child to see mentally the oral counterparts of the printed symbols. Only after he has done this does he respond with meaning to the symbol. Reading and understanding are distinct processes even though reading always includes understanding.¹³ Reading is a *linguistic* process and is best taught as a communication and language skill. The child should learn that what he can think he can speak; what he can say, he or others can write or have written; and what is written, can be read.

Chapter 7, entitled, "Developing Reading Readiness," identifies the specific factors needed for successful beginning reading and provides techniques for developing them. It provides techniques for improving concept formation, auditory discrimination, visual discrimination, and left-to-right progression. It also takes up the learning of the alphabet and the use of readiness tests.

5

READING- A LANGUAGE EXPERIENCE

In the introduction of this book we suggested that the teaching of reading functions best when it is one phase of the total communicative process. In introducing Chapters 1 and 2 we noted that reading is communication. The next two chapters will concern themselves with the significance of the child's early language experiences upon his achievement in reading.

The teacher of reading needs to understand communication and language for the following reasons:

- (1) The child's proficiency in the communication and language skills, both speaking and listening, is the best indicator of the child's readiness for beginning reading.
- (2) The teacher himself cannot understand the reading process completely without understanding communication and oral language development generally.

And basic to the understanding of the language process are the following (p. 36) ³¹:

- (1) The development of skill in language is intimately related to the child's total development and growth.
- (2) Children differ in language, and hence in reading proficiency, because they differ in their emotional, social, intellectual, and physical development.

Communication is the heart of the language arts. Without communication listening or reading cannot occur. Reading takes place only when the child shares the ideas that the communicator intends to convey.

The Nature of Human Communication

Communication is a sensory-motor process. It includes the motor reactions of the signmaker—the speaker or writer, and the reception of the

sign by the listener or reader (p. 166).⁴² In communication the organism is affected by an external event and reacts to it. The motor actions are principally two: natural signs and conventional symbols. The distress cries of children, the sex calls of the animal world, the emotional reactions of humans, our tears, cries, and groans, and our blushing, shivering, and yawning, are natural signs. Words and numbers are conventional symbols. They are conventional because they have no meaning of their own.

We have used the words, conventional symbols, deliberately. A sign in our estimation has a direct relation to its object or referent. If some balmy afternoon you look out of the window and see water dripping from the trees, you infer that it is raining. The water is a sign of the rain (p. 19).⁴⁹ The word "water," on the other hand, does not have a direct connection with rain. The person may use it and rain need not fall. It is interesting to note that aphasics cannot do this. One such patient, when asked to repeat "The snow is black," immediately replied: "No, the snow is white."¹⁸ He could repeat the statement only after being assured that it need not be true to be assertable. For the aphasic the symbol generally must have a direct relation to its referent.

Except for the fact that we have conventionally agreed among ourselves that the word "rain" should be used when the vapor in the atmosphere condenses and falls in watery form, we might use the word "flour." However, if we want to communicate with others we must abide by their conventions.

Since the word does not have any meaning of its own, meaning must come from another source. Generally we get meaning through experience. Communication depends upon a certain commonality of experience between the signmaker and the observer. For communication to take place the symbol must call forth a similar response from the giver and the recipient of the communication. Unfortunately, this frequently is not the case. Porter³² points out that

Each human being represents a different tangle of motivations, attitudes and needs; each represents literally billions of varied experiences which have been assimilated and ordered in ways that are constantly undergoing change. Each attempt at communication, at understanding or being understood, bears the mark of this prodigious personal context. No word or gesture can ever mean *precisely* the same thing to any two individuals; the closer they can come to using similar meanings, the more effective the communication between them will be.*

Perfect communication is rare. Not only are our experiences usually different (and hence also our meanings, ideas, and concepts), but fre-

* William E. Porter, "Mass Communication and Education," *The National Elementary Principal*, 37 (February 1958) 12-16. Reprinted by permission of the Department of Elementary School Principals, National Education Association.

quently we are not familiar with all the ways of expressing meaning. We are not completely familiar with the speaker's or writer's specific modes of expression. Finally, words create only a symbolic representation in the mind—never exact reality.

Communication always involves two elements: (1) those ideas or experiences that we wish to communicate and (2) the signs or symbols that we use to convey these ideas or experiences. Thus, communication is not necessarily only a human characteristic. The worker ant that with her antennae strokes the head or the abdomen of another ant in order to gain entrance is communicating. The bee that engages in a dance to inform a fellow worker of the distance and the direction of a new supply of food is communicating. The cluck of the hen that sends her chicks scurrying is also communication (p. 4).⁹ Even a traffic light or a temperature control system can communicate (p. 267).¹⁷ To communicate is not necessarily human; to use the most highly developed system of communication, to use speech, is necessarily human.

In summary, communication is a sensory-motor process involving the use of signs. In human communication, these signs are symbols or words and they receive their meaning from and through experience. In every sense of the word reading is the culminating act of the communicative process, initiated by the thoughts and the signs or symbols put on the printed page by the writer.

*The Meaning of Language **

Language has been variously defined. Soffiotti † notes that language refers to "the systematized set of vocal habits by means of which the members of a human society interact in terms of their culture." Sapir³⁵ suggests that language is a purely human method of communication through a system of voluntarily produced symbols. Language is systematic (p. 20).⁴⁹ The speaker cannot alter indiscriminately the sequence of the words. He does not say: "The man fat in sat can."

Writers generally have pointed out that language, the ability to use systematized verbal symbolism, puts man on a unique plane. Frisina (p. 11)¹⁶ notes that the acquisition of verbal symbolism is a unique human characteristic. Cassirer (p. 44)⁸ defines man as "*animal symbolicum*." Langer (p. 83)²⁷ notes that

Language is . . . the most momentous and at the same time the most mysterious product of the human mind. Between the clearest animal call of love or warning or anger, and a man's least, trivial *word*, there lies a

* For further discussion see Smith and Dechant, *Psychology in Teaching Reading* (pp. 21-22).³⁸

† James P. Soffiotti, "Why Children Fail to Read: A Linguistic Analysis," *Harvard Educational Review*, 25 (Spring 1955) 63-84. Reprinted by permission of the Graduate School of Education, Harvard University.

whole day of Creation—or in modern phrase, a whole chapter of evolution. In language we have the free, accomplished use of symbolism, the record of articulate conceptual thinking; without language there seems to be nothing like explicit thought whatever.*

Man, like the animal, can communicate through taste, touch, and smell, and through grunts and groans, but he also can learn to communicate through language or verbal symbolism. He alone has the ability to name his concepts.

THE CHARACTERISTICS OF LANGUAGE

Definitions of language generally emphasize the following five characteristics of language:

1. Language is a human attribute.
2. Language is acquired behavior.
3. Language is verbal symbolic behavior. Language primarily is oral in nature. Indeed, some cultures have not developed a written language.
4. Language has individual and social significance.
5. Language generally is reflexive behavior. After the child has acquired language, language tends to become almost completely reflexive behavior. Like the man who walks home and doesn't know how he got there, in our use of language we proceed quite automatically even though the mind is occupied in thought.⁴⁴

The definitions of language that were quoted above touch upon points one through three. Point four needs further elaboration. Writers (pp. 45-46)^{34, 60} have emphasized the social utility of language. It is the basis for group communication and living. Without it we should have difficulty sharing our ideas. We use language to influence others, and by it others influence us. Since society propagates itself through education, language becomes essential to the development and propagation of a civilization and culture. Through it we transmit to our children the accumulated knowledge of the past.

Language also has significance for the individual. Whether justly or unjustly, others judge us by our language. Language is considered to be an index of intelligence, culture, and personality (p. 4).²⁹ It is a tool that may be put to many uses. We use language to learn, to retain, to recall, to transmit information, and to control our environment. Through it we symbolize and order our concepts of the universe. Kraus²⁶ notes

* Susanne K. Langer, *Philosophy in a New Key* (New York: Mentor Book, New American Library, 1948). Originally published by the Harvard University Press. Reprinted by permission.

that words are symbols of reality and permit us to manipulate knowledge concerning reality. Language allows us to speak of things not in sight, and to project into the future. Language also allows us to hold on to reality, to fix it in experience, and to make it available when needed (pp. 109-110).²⁷

The word makes concepts usable. No better illustration of this can be had than the water-pump experience of Helen Keller (pp. 23-24).²⁵

We walked down the path to the well-house, attracted by the fragrance of the honeysuckle with which it was covered. Someone was drawing water and my teacher placed my hand under the spout. As the cool stream gushed over one hand she spelled into the other the word *water*, first slowly, then rapidly. I stood still, my whole attention fixed upon the motions of her fingers. Suddenly I felt a misty consciousness as of something forgotten—a thrill of returning thought; and somehow the mystery of language was revealed to me. I knew then that “w-a-t-e-r-” meant the wonderful cool something that was flowing over my hand. That living word awakened my soul, gave it light, hope, joy, set it free! . . . I left the well-house eager to learn. Everything had a name, and each name gave birth to a new thought.

In the above incident Helen Keller became aware of the representational function of symbols. The endless job of associating each symbol with a specific object was now over. She had learned that a word can be used to signify and to order the events, ideas, and meanings of the world about her.

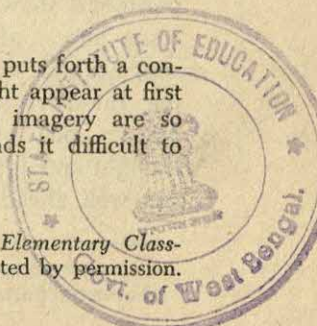
A child early learns to use language to manipulate his environment. At first, he makes speech responses to get the esteem and recognition of others. Speech brings him social approval and usually gets him the food or water that he craves (p. 173).⁴² Gradually, other less direct incentives become sufficient, and indeed the drive to speak eventually becomes self-sustaining.

THE ROLE OF LANGUAGE IN THINKING

As skills in language develop, language serves an increasingly significant role in thinking. Adults are prone to tell youngsters to “shut up,” to “be quiet,” or to “keep still.” Fortunately, they don’t succeed too well. The child

. . . continues to “drip” speech, just as a leaky faucet puts forth a continuous spatter. This is not rank disobedience, as it might appear at first glance. Rather, the child’s inner thinking and mental imagery are so closely associated with the vocal expression that he finds it difficult to separate them (p. 4).⁴³

* Charles Van Riper and Katharine G. Butler, *Speech in the Elementary Classroom*. © 1955, pp. 2-3, Harper and Row, Publishers, Inc. Reprinted by permission.



The child talks to himself as he tries to understand the mechanisms of the toy plane in front of him. The little girl carries on a full conversation with her doll in the course of a few minutes. What the adult only thinks, the child both thinks and speaks.

Adults are not different in this respect from children. Much of our thinking actually includes "talking to ourselves." When put on the spot as it were, the adult will speak to himself in anticipation of what he is going to say. All of us can remember the time when we were summoned to the principal's office or when we asked a girl for the first date. The words we were going to say were spoken many times first to ourselves.

Language and thinking are similar also in that they require the same basic processes. The ability to abstract, to conceptualize, and to form categories is a common requirement both for highest level language and thought. In fact it may be argued that language and thought are the same process. The Greek word *logos* is the symbol for both reason and speech. Kant (p. 183)⁴² wrote: "To think is to speak to oneself." And Watson⁴⁷ referred to thought as "subvocal use of language."

Implicit speech seems to accompany thinking as well as reading. Jacobson²³ suggests that the muscles controlling the eyes contract during imagination as though the individual were looking at the object. When the subject imagines that he is performing a muscular act, a contraction occurs in those muscle fibers that normally participate in carrying out the act. When the person thinks, the muscles of the tongue or upper lip vibrate as if he were saying the words. Edfeldt,¹⁵ studying the electromyographic records^a of university students and adults, found that all engaged in silent speech while reading. Good readers engaged in less silent speech than poor readers, and the more difficult the material, the more silent speech occurred. This, of course, does not mean that reading without silent speech is impossible. It simply means that in these experiments silent speech was always present. It would seem that recommendations to the effect that training to remove silent speech be discontinued are somewhat premature. Reading may begin with almost total dependence upon speech; it perhaps can be freed from this dependence.

There is little doubt that a certain amount of vocal behavior and lip and tongue movement accompany many thought processes. Recent experiments show that students preparing for an examination actually become hoarse after four hours of intensive study. Hebb (pp. 59-60)²⁰ suggests that some verbal behavior may play a vital role in problem solving. Intensive thought is much more than a simple intracranial process. He (p. 60)²⁰ adds, however, that sentence construction shows that thought and speech are not entirely the same process. Thought processes run well ahead of our articulations. Van Riper and Butler (p. 100)⁴³

^a In this process surface and needle electrodes pick up electrical potentials from the contracting muscles.

note that "Just as there is an eye-voice span in oral reading, so, too, there is a similar scanning process preceding utterance. Our minds keep looking ahead of our mouths, scanning our memory drums for the words which will be needed." * We know that aphasics, although unable to speak, do think and do learn to read. However, it is much more difficult for them to do so. It seems also that deaf mutes "think" and "read" with their fingers and their hands.

Up to this point we have emphasized the following points:

1. We have discussed the nature of communication and have found that *reading is communication*. Communication involves the transmission of meaning and this occurs in the reading process. Without the communication of meaning there is no reading.
2. We have examined the nature of language or communication through verbal symbols and have found that reading meets all the criteria of language, albeit, a written language. *Reading is a linguistic process*.
3. In examining the nature of language we found that it has many of the characteristics of thought. This brings us to another generalization. Reading is language; language involves thought; and *reading is a thinking process*.

The implications for the teaching of reading are many:

- (1) There is little point in teaching a child to read until he can use sentence language in conversation.
- (2) It is unsafe for the reading text to run any considerable distance ahead of the child's own oral language expression; otherwise he is virtually trying to learn a foreign language and valuable instructional time is lost.
- (3) Language training should accompany reading instruction every step of the way. A linguistic background for reading lessons should be continuously built at each stage of growth.
- (4) Every reading lesson should be an extension of language and a means of developing the child's linguistic skill.
- (5) The child's comprehension of speech and his oral use of language should be checked frequently. Appraisal of the linguistic competency of all slow learners and language handicapped children should be a part of the diagnostic and remedial program.
- (6) More oral work should be provided in teaching beginners and handicapped pupils.
- (7) Some of the effort expended in teaching slow learners by dint of drills and devices might better be expended in working on development in oral language and comprehension.
- (8) More attention should be paid to aural comprehension as a prerequisite for beginning reading. Language work should include ample experience in listening with full comprehension (pp. 61-62). † ²¹

* Charles Van Riper and Katharine G. Butler, *Speech in the Elementary Classroom*. © 1955, Harper and Row, Publishers, Inc. Reprinted by permission.

† Gertrude Hildreth, *Teaching Reading*. © 1958, Holt, Rinehart and Winston, Inc. Reprinted by permission.

Learning to Listen

We would like to emphasize the last point in the above statement taken from Hildreth. She suggests that there is a genuine need for the development of aural comprehension or listening. She implies that this will have an important effect on the development of competency in reading.

Communication among humans is usually through spoken symbols. However, communication may involve expression as through speaking and writing^{*} or reception and comprehension as through listening or reading.³ Listening is the first language art that the child develops and so the remainder of this chapter will be devoted to its development. Chapter 6 will take up the development of proficiency in speech.

As we shall see, listening proficiency is both an important determinant of reading proficiency and of successful learning in general.

Listening, if it is to be learned at all, must be taught early in life. Carhart (p. 279)¹¹ points out that

The capacity for mastering new sound discriminations diminishes with age. It is common knowledge that a child will learn to speak fluently the language he hears, regardless of his race or nationality. By contrast, when an adult learns a new language, he finds that he has what native speakers call a "foreign accent." The fault is partly that he has fixed his habits of speech, and partly that he has fixed his habits of listening. The latter interests us here. What happens is that he does not notice subtle differences in the phonetic elements and cadences of the two languages. He "hears" the elements in the new language as though they were identical with those of his native tongue. When he talks, he puts the old patterns in the new language. Unless he is taught to notice the subtle differences, he may go through life without even realizing that they exist. †

Unfortunately too many children are hearing but are not listening. They are apprehending or taking notice of sound without understanding or interpreting that sound. Listening is as much a thinking activity as is reading. Only by associating experiences with symbols can the pupil arrive at meaning. Listening occurs only when the pupil organizes and remembers what is heard. The major goal of all communication, including listening, is understanding or comprehension, and this is a central process involving thinking.

* Written words do not have a direct connection with the object or event. They are only symbols of speech. They are symbols of symbols, much as a check is a symbol of money, which itself is merely a symbol of purchasing power (p. 24; p. 264).^{29, 14} Spoken words are primary symbols; written words are secondary symbols.

† Hallowell Davis, editor, *Hearing and Deafness: A Guide for Laymen*. © 1947, 1960, Holt, Rinehart and Winston, Inc. Reprinted by permission.

Pupils frequently complain of not being able to pay attention and to concentrate. The fact is that some pupils bring much more potential to the listening situation than others but leave with much less learning. They have a greater listening wattage, but may not have been in focus with the speaker. They did not come prepared to listen. They are concentrating, but perhaps they are not concentrating on the task at hand. Listening ability also may be limited by lack of listening vocabulary, by misinterpretation of the speaker's words, or by inability to translate the speaker's words into the proper experiential content.

Although listening is the first language art, it has been the most neglected of the language arts. Children come to school "to learn to read and to write," but rarely do they express an interest in learning to speak or listen.¹⁰ There is a reason for this, and perhaps the apathy of educators is a crucial factor in this lack of interest. A not uncommon reaction of professional educators is: "What does listening and speaking have to do with reading?" For some strange reason it has been assumed that the child develops into a proficient listener without the benefit of formal instruction. If he can hear, it is assumed that he can and will listen. Thus teachers still may encourage the pupil "to listen" without helping him to improve his listening skills.

The neglect of listening in the school curriculum is both surprising and detrimental. Skill in listening is closely related to proficiency in many academic areas. For some children, especially for children in the lower grades, for children who are slow learners, and for children who are poor readers, it is the most important means for achievement. The listener, not the speaker, is the prime director of the learning process.

In the past, listening played a much greater role in the learning process than did reading. For ages communication was by word of mouth. The cultural heritage was passed from generation to generation in poem, story, and song. However, with the advent of printing, the emphasis passed to reading of the printed material. As significant was the trend from oral reading to silent reading.

Today, with radio, television, and improved means of transportation, oral communication (and hence listening) is receiving much greater emphasis. And, thus it should be. Listening allows the pupil to hear speeches and group discussions, to enjoy the theater and music, to enjoy assembly and club programs, to get the most out of radio and television programs, and to be successful on the job. Listening is beneficial in every school setting including the gymnasium, the shop, the science classroom, and music room.

In evaluating their programs, schools have found that the child is required to listen for a substantial amount of time in the average school

day. For example, teachers give many of their classroom directions orally. They make oral assignments. They describe procedures orally. They constantly use verbal means for motivating children.

There are other reasons for improving the listening skills of children. Some children are better listeners than readers. Reading is not learning. It is only one of the media for learning and for some children it is an inferior medium. In fact, up to about the fifth grade (mental age of eleven) children generally learn more and remember better through listening than through reading. Generally, the lower the reading ability is and the lower the scholastic aptitude is, the greater is the advantage of listening over reading. Since, however, reading allows the pupil to go back and reread, reading becomes more effective as the difficulty of the material increases.

Listening ability also is basic to the learning of reading. Listening and reading are essentially similar. Both involve the reception of ideas from others. Reading demands sight and comprehension; listening calls for hearing and comprehension.

- (1) Listening provides the vocabulary and the sentence structure that serve as a foundation for reading. Reading success depends upon the child's aural-oral experience with words. In a very real sense the child reads with his ears, mentally pronouncing the words to himself.
- (2) Without the ability to hear and interpret sounds, the child cannot learn phonics.
- (3) Ability to listen to and provide an ending for a story is a good indicator of readiness for reading.
- (4) Words most easily read are those that have been heard and spoken.
- (5) Listening ability (if scores on a listening comprehension test are higher than the scores on a reading comprehension test) is an indicator of the pupil's potential ceiling in reading ability.

The child learns language by ear. The vocabulary and skills in language structure that he brings to school were learned first through listening. In fact, if it were not for these learnings the child would not, or at least only rarely, learn to read (pp. 44-45).³ The teacher of reading should take advantage of these previous learnings. He should help the child to associate the visual symbols with the sounds previously learned. If the child has not learned to listen, he must be taught.

LISTENING PROFICIENCY

There are varying degrees of ability in listening and these abilities develop sequentially.⁴⁸ Perhaps the first level in listening development is auditory acuity. Unless the ear can react to sound waves and transmit them along the nervous system, all other listening skills are doomed. Listening, however, goes beyond the mere recognition of sounds. Adequate hearing is only the first step in listening. The second level is the interpretation and aural assimilation^{4, 7} of the nerve stimuli. The listener must understand what has been said. A third level of listening proficiency is discrimination and retention. The good listener can discriminate between and retain the various sounds. On the basis of his memory traces for sounds he can alter his speech production to fit the pattern of sounds which he has held in mind.

Let us examine some of the skills required for interpretative listening. The listener must:

1. Identify the speaker's purpose.
2. Develop empathy with the speaker.
3. Anticipate what is being said.
4. Listen for the main ideas.
5. Listen for the details.
6. Follow oral directions.
7. Remember a sequence of details.
8. Draw inferences and conclusions.
9. Mentally summarize what has been said.
10. Weigh and evaluate the speaker's evidence.
11. Listen between the lines.
12. Distinguish fact from fiction.
13. Distinguish essential and relevant material from unessential and irrelevant material.
14. Use context clues to understand.
15. Identify transitional elements.
16. Listen in terms of past experience.
17. Listen for relationships.
18. Analyze critically what is being said.
19. Listen appreciatively, creatively, and critically.

Children need training in these skills. Some do not possess even a minimal degree of proficiency in listening. Some cannot detect sounds, ideas, or facts. Some cannot give meaning to what they have heard because they cannot relate it to their past experiences. Some cannot perceive the relationships that exist between the facts and ideas that were

spoken. Some cannot discover the implications of what was said and some cannot follow directions or sequences in a story.

We do not mean to imply that every pupil in the first grade must possess all these skills or that even one child possesses all of them. However, for the sake of completeness we have listed even the more advanced skills, and later in discussing the development of listening skills we will suggest techniques applicable at various stages during the elementary school years. Since reading readiness is a concept applicable at all stages of development, and since teachers at all levels must concern themselves with the pupil's readiness for various reading tasks, teachers need to know whether the child's listening proficiency is keeping pace. If he doesn't listen well, he may not be able to read well. If his listening skills are more developed than his reading skills, it is an indication that he can become a better reader.

Children are not equally ready for listening. In fact, not all of them need the same degree of listening proficiency, and not all of them will reach the same levels of listening proficiency. The teacher must begin with lower levels of listening skill and gradually lead the pupil to higher levels.

DEVELOPING THE LISTENING SKILL

The listening skill must be consciously fostered in the school. The alert teacher plays a major role here. He provides an adequate physical environment. He sees to it that children have visual as well as auditory contact with one another. He adjusts listening time to fit the child, since young children have short attention and memory spans. He regulates the temperature in the classroom, and visual and auditory distractions are eliminated as much as possible. He discovers children with hearing defects and adjusts learning tasks to fit their needs.

The teacher promotes the listening habit mostly by being a good listener himself and by providing the proper psychological climate for listening. He has high regard for what the child says. He helps the child to select content suitable to the experiences and interests of the group. He helps to formulate a purpose for listening. He encourages the child to listen for new words and ideas and personally provides the opportunities for listening. He introduces new words, reads good literature, and points out sound differences and similarities in words.

Listening can be taught through story telling, conversation, dramatization, singing of songs, reading of poems, and reading or speaking of rhymes. Children should be encouraged to engage in "show and tell" exercises, in debates, quiz shows, and discussions. They ought to discuss topics informally, ask questions, make plans, give reports, follow direc-

tions, criticize, and evaluate what others have said. Each of these activities creates multiple opportunities for listening by other pupils. The phonograph, radio, television, tape recorder, piano, telephone, and band instruments are particularly useful in developing the listening skill.

Recent literature is replete with techniques for teaching the listening skill. We will enumerate only some of these, and in each instance will try to point out the implication that the exercise will have in the teaching of reading.

1. With eyes closed the child learns to make gross discriminations, for example, between a tap of a ruler, a knock on the door, a clap of the hands, or a footstep. This is the first step in developing the child's auditory discrimination skill and is necessary for proficiency in phonics.
2. The teacher demonstrates how to make a simple toy. He gives the directions orally and then asks the pupils to construct a similar toy. He asks some child to repeat the directions and checks the activity of each child to see that the desired directions are followed. This activity teaches the ability to follow a thought sequence, a skill needed for successful reading comprehension.
3. When teaching the discrimination between right and left, the teacher gives the directions orally, such as: "Raise your left hand"; "Put your right foot forward." This exercise, besides developing comprehension, also prepares the pupil for the left-to-right activity in reading by teaching the discrimination between right and left.
4. The pupils listen for the main idea of a paragraph, story, poem, or talk.⁶ This prepares them for reading for main ideas.
5. The teacher reads a poem or short story to the class and asks the pupils to submit a title for the poem or story (p. 215).²⁸ This is another exercise in reading for main ideas.
6. The teacher administers tests orally (p. 213).²⁸ This exercise teaches following of directions, comprehension, and critical listening. Critical listening will prepare the pupil for critical reading later.
7. The teacher starts a whispered message around the room from child to child and the last child repeats it aloud (p. 214).²⁸ In this activity the emphasis is on accuracy in relaying the message from one to another. This exercise perhaps best emphasizes the need for accuracy in communication and interpretation.
8. Pupils prepare short talks on a favorite topic. Other pupils in the class should be ready to state the organization of the talk. This exercise teaches the skills of listening to and reading for the organization.
9. The teacher reads a short paragraph containing a sentence or two

that are not in harmony with the context. He may read materials that omit evidence, that are based on a false premise, or that are not logically organized. The pupil may be asked to discriminate between fact and fiction. He should learn to detect propaganda in advertising, in newspaper accounts, and in essays, and he should learn to listen for implied meanings. Later it is hoped he will apply these critical skills in reading.

10. Pupils listen to two different broadcasts or recording on the same news content, one giving a factual report, and the other giving an analysis. Pupils should analyze the two reports, studying the vocabulary used and looking for indications of distortion (p. 218).²⁸ This exercise again teaches critical listening, and the techniques learned should be useful in critical reading.
11. The teacher requires pupils to respond to the first announcement of directions (pp. 214-215).²⁸ If the pupil asks the teacher to repeat, it may be profitable to ask the pupil to do this. Many times the pupil has developed a habit of "not listening" the first time. Students frequently develop the habit of not reading carefully the first time. This exercise may help to develop proper habits in this area.
12. The teacher uses the tape recorder to record the child's speech and then gives the child an opportunity to hear himself. The teacher should guide him in "what to listen for." Later, before beginning reading, the pupil should identify his purposes for reading.
13. The pupil learns to listen for "language signals" such as: "first," "there are several ways," "furthermore," "several suggestions are," or "on the other hand."²⁴ In reading, he needs to look for similar language signals.

These exercises teach listening and develop many of the skills previously listed. In general they prepare the pupil for the recognition and comprehension tasks that he will meet in reading.

Proficiency in Speech and Reading Readiness

Thus far this chapter has concerned itself with three aspects: (1) the nature of human communication or language; (2) the importance of language in thought; and (3) the significance of listening proficiency and how it might be developed. In the section that follows we will review the early speech development of the child and outline its importance for reading readiness and achievement.

The child begins to vocalize almost immediately after birth. Generally, these vocalizations are global reactions, involving the entire bodily mechanism. There is no awareness or purpose in these responses. They arise as a column of air is expelled from the lungs. The process is reflexive in

nature, and the air passes between vocal folds tense enough to produce sound. The child's first use of the physical apparatus necessary for speech occurs at birth when he takes in breath and emits the birth cry.

At this stage there are no speech organs as such. The child's grunts, gurgles, coos, snorts, cries, and hiccoughs are primarily associated with the nonlinguistic function of the organs.⁴⁰ The child frequently is merely breathing, swallowing, or hiccoughing. He has not really begun to use the organs for speech. By exercising the physiological functions, he is conditioning the muscles for their nonspeech functions.

The child soon becomes aware of the sounds that he is making. He enjoys vocal play and in his cooing and gurgling produces a greater number and variety of sounds than are found in any given language.* Some children may be able to produce a *wh*, *ch* or *l* sound at this time, but unfortunately are unable to use it correctly in words for another two or three years.

The third stage occurs at about nine or ten months of age and is called lalling. At this time the child repeats *heard* sounds or sound combinations (p. 20).² Referred to as echolalia, the child actually echos the sounds that he or others produce. A circulatory process is now set up. The child produces a sound (oral) and hears it (aural). The first oral-aural association is being developed. At this stage, through imitation, the child may learn new groupings of sounds, but he doesn't learn new sounds (p. 55).⁴¹ He repeats sounds which he already uses spontaneously.

Between twelve and eighteen months the child produces his first words. These frequently are quite redundant (ma-ma, da-da, bye-bye, ba-ba) and represent a complete thought unit. Thus, "ba-ba" may mean "Give me the bottle." However, the speech is undifferentiated. "Da-da" may mean anyone that looks like daddy. The word cannot be differentiated because the child's perceptions of what a daddy is are not differentiated. With experience his perceptions become more discriminative and so does his usage of words.

Readiness programs have not paid sufficient emphasis to the difficulties that the child has in coping with language as a means of transmitting a message to another.³⁷ The initial language experiences of children are not necessarily communicative. The child uses language to understand his environment and to express or "think aloud" his experiences. In monologue he orders the universe. His language is not the orderly and sequential language that he meets in the printed text.

The child next learns that the name of an object stands for a class of things. He identifies similar objects and groups them under one word. The child is not actually abstracting. He identifies similarities in objects,

* Speech sounds of any kind are called phones; speech sounds that are used in the language are called phonemes. Consequently, all phonemes are phones, but not all phones are phonemes.

but is not yet capable of seeing their differences. Children during this period feel that they know the whole of reality. They do not discriminate between the object and the word that stands for the object. To them, the word is both perception and reality.

Finally, the child learns to develop concepts and uses words to communicate his concepts. The word now is a symbol in its true sense.

Experience has shown that the child must have reached a certain amount of oral language maturity before beginning reading. The reading teacher is interested in the "speech age" of the child. He must know how many phonemes the child uses consistently and how frequently the pupil substitutes because of an inability to use a certain sound. Consonant sounds generally develop in a definite order. Some children develop the sounds earlier, and some develop them later, but by certain ages most children have mastered certain specific sounds. Hildreth (p. 52)²¹ suggests that by the age of seven the average child articulates correctly the consonants and consonant blends 90 per cent of the time.

Poole²⁰ studied 140 pre-school children over a period of three years and found that the rate of development in articulation is similar among boys and girls between the ages of two and one-half and five and one-half. After this girls develop more rapidly and attain the same degree of proficiency by six and one-half that boys attain only at seven and one-half. Poole also found that there is a regular progression in articulation development. Figure 5-1 summarizes her findings and indicates at what age certain sounds had been mastered by the 140 children in her group. Probably the reason that children learn to make the *b, p, m, w, d, t, n, g, k, ng,* and *y* sounds so early is that feeding exercises the tongue muscles required to make these sounds.

Figure 5-1. Ages When Children Normally Have Mastered the Consonant Sounds (41; 9)

Ages	Consonants
3.5	b, p, m, w, h
4.5	d, t, n, g, k, ng, y
5.5	f, v, z, s
6.5	sh, zh, l, th, †
8.0	z, s, r, wh, ch, † j †

The *z* and *s* sounds are listed twice because after the age of five when dentition causes a spacing between the teeth they become distorted in a lisp. This lisp disappears when normal dentition is reestablished.

²⁰ The same as Davis, Irene Poole.

† *Th* as in thin or then.

‡ Davis' study gives no data for the *ch* and *j*.

Although serious deviation from normal speech development is not too frequent among first graders, Davis¹² indicates that quite commonly children have difficulty with *zh*, *sh*, *l*, *th*, *z*, *s*, *r*, and *wh*. Van Riper and Butler (p. 64)⁴³ point out that most articulatory errors made by children involve *r*, *s*, *l*, *k*, *sh*, *th*, *ch*, and *f* and that elementary school children have most difficulty with *l*, *r*, *s*, *th*. For example, it is not uncommon to hear a first or second grader speak in this manner:

This is the boat that my gwandfathe' sent me fo' my bufday. . . . The postman bwrought it just befo' we went to the lake on Satu'day. It will weally sail! One time when I wasn't watching it, it sailed wight unde' the wope to the deep pa't of the lake and my fathe' had to swim out fast and get it. It wides waves too. The moto' boats on the lake made some waves, but my boat didn't tu'n ova (p. 24)! *³⁰

The sounding errors in the above are chiefly: *r*, *th*, and *l*. Many children show even more serious deficiencies in language structure. They cannot formulate sentences or turn ideas into words.

Undoubtedly many pupils who are deficient in reading actually are deficient in general language ability.⁵ Warfel⁴⁵ suggests that the initial step in reading instruction should relate what is in the ear and on the tongue to what is to be put into the eye. He⁴⁶ believes that good reading initially must be accompanied by vocal sounds. He adds that only after much experience is the child able to change marks into meaning without putting them first in the ear and on the tongue. Davis¹² adds that the earliest reading materials should contain a minimum of late-developing sounds and a minimum of words in which a single spelling combination indicates a number of different sounds.

Harris (p. 38)¹⁹ notes that the major aspects of language that are significant for reading readiness are: the child's vocabulary, mastery of sentence structure, and clarity of pronunciation. These skills are learned through listening and speaking.

Artley (pp. 325-326)¹ has outlined the language areas in which the child needs special preparation before beginning to read. He suggests that the readiness teaching should include the following:

1. Developing awareness of oral words as language units. For example, "Gimmethe" is three separate words.
2. Enriching oral vocabulary.
3. Strengthening meaning associations.
4. Formulating sentences.
5. Organizing ideas into language units.
6. Using narrative expressions.
7. Improving articulation.

* Mary Peebles Hinman, "The Teacher and the Specialist," *NEA Journal*, 49 (November 1960) 24-25. Reprinted by permission.

8. Developing sensitivity to inflectional variants.
9. Developing awareness of sentence structure.*

Not all children have equal proficiency in these areas. The slow learner generally has a difficult time interpreting speech and expressing himself. Children from lower socioeconomic levels and from home environments in which English is perhaps secondary to another language do not develop the vocabulary and the accuracy in pronunciation and sentence construction that is found among children with more favorable surroundings.

Oral language readiness basically means the following: the ability to speak without abnormal hesitation; to articulate and enunciate clearly; to pronounce words correctly; to associate words with experiences; to talk in simple sentences; to tell a simple story; and to think and speak sequentially. Above everything else, in learning to read, the child must perceive the relationships between the spoken and the written language. He must learn that what can be said also can be written.³⁶

Summary

This chapter has been concerned chiefly with the influence that listening and speaking proficiency have on readiness for and achievement in reading. In addition, some time was devoted to the discussion of listening and to the proposal of techniques for developing the listening skill.

In general, the chapter suggests that reading success depends upon the child's aural-oral experience with words.⁵⁰ Training in listening develops auditory discrimination which in turn serves as a basis for phonetic analysis in reading. Listening and speaking provide the vocabulary and the sentence patterns for reading. The instruction in grammar, usage, and composition, occurring either directly or indirectly in learning to listen and to speak, is also beneficial in learning to read. Finally, words and sentences most easily read are those that have been heard and spoken. *The language is the same in all the language arts: only the media for communication are different* (p. 15).³³

Questions for Discussion

1. Why must the teacher understand the communication process?
2. What is the meaning of (a) communication, (b) language, (c) sign, (d) symbol?
3. Why is communication rarely perfect?
4. Illustrate how the experience of Helen Keller at the well demonstrates that words make concepts usable.
5. Criticize Kant's statement: "To think is to speak to oneself."

* A. Sterl Artley, "Oral Language Growth and Reading Ability," *Elementary School Journal*, 53 (February 1953) 321-328, copyright 1953 by The University of Chicago. Reprinted by permission.

6. Discuss some of the skills that are required for interpretative listening.
7. Identify five criteria of an effective listener.
8. List some bad listening habits and illustrate how they might be overcome.
9. What are the implications of the study by Poole, especially of the statement that the earliest reading materials should contain a minimum of late-developing sounds and a minimum of words in which a single spelling combination indicates a number of different sounds?
10. What language skills are significant for reading readiness? Include in your answer a discussion of recommendations by Warfel, Harris, and Artley.
11. Criticize Watson's statement that thought is the "subvocal use of language."
12. What are the implications for the teaching of reading in the studies that suggest that thought is accompanied by a certain amount of vocal behavior?

Basic Reading Principles

1. The younger the child, the more vocal expression is tied to the child's thinking.
2. Reading comprehension generally catches up with listening comprehension during the fifth grade.
3. After the seventh grade, average and above average children generally learn more efficiently through reading than through listening.
4. Listening tends to result in better delayed recall than does reading.
5. The slow learner and the retarded reader tend to learn more through listening than through reading.
6. Generally, the more retarded the reader, the greater is the advantage of listening.
7. The greater the difficulty of the material, the less effective is listening, and the more effective is reading.
8. When listening ability is low, reading ability tends to be low.
9. When listening ability is high, it is impossible to predict reading ability.
10. When reading ability is low, it is impossible to predict the level of listening ability.
11. When reading ability is high, listening ability may be high or low.
12. The level of a child's listening ability is a good indication of the minimum level of reading ability that the child should be able to attain.
13. Listening generally is more effective than reading as a learning device with children who suffer from deficiencies in near-point vision or who are below the chronological age of eight.

6

DEVELOPING LANGUAGE READINESS

Chapter 5 established the importance of oral language for beginning reading, and it identified the specific language or speech skills that the child needs before he can successfully undertake the reading task. In this chapter we are concerned with the nature and structure of the English language and with the actual development of language skills, especially those required for accurate reproduction of the sounds of the language.

The chapter contains little that the average classroom teacher will use daily in the developmental reading program. This cannot and should not mean that it is unimportant. The teacher must know the sound system and the basic principles of language structure. Furthermore, in the self-contained classroom the teacher is daily a diagnostician and correctionist of the child's language difficulties. We cannot refer all children to the specialist, and on the other hand, we cannot simply ignore a child's defect. There is only one alternative. The teacher must be prepared to detect and correct language defects, especially those that have a bearing on the pupil's achievement in the other language arts areas.

The reading teacher is as interested in the development of good speech as is the speech correctionist. He is a teacher of language and communication skills. He knows that development in reading closely parallels development in speech. He realizes that if the child has not acquired the needed language facility before entering school, the child must be given the opportunity to do so in school.

The Phonology of Language

Speech improvement is

... more than tongue exercises, memorization, vocal phonics, articulation drills, and activities. It is more than instruction in the improvement of voice quality, pitch, and intensity. It is more than training in the ebb

and flow of speech rhythms. Indeed, it is more than the sum total of all these parts. Speech improvement should go far beyond the mechanics of speech drills into the area of meaningful language. One of the most important aims might well be to help the children to verbalize their thoughts—to be able to “think on their feet” efficiently and adequately (pp. 2-3).^{*} 35

Nevertheless, mechanics are important. Success frequently is dependent upon a command of the particulars of the language. A major concern is that children learn to *articulate* all the vowels and the consonants without distortion, omission, substitution, addition, or transposition. Children must be taught to *enunciate* all syllables clearly. They must be taught to *pronounce* accurately. They must give the total visual form its proper sound and must accent the appropriate syllable or syllables. *Children generally must learn the alphabet of sound before they can be taught the alphabet of letters.*

A student of language, and hence the teacher of reading, must familiarize himself with phonemics or the discrimination and production of sound. He must have an elementary knowledge of the physiology of speech.²⁵ He must know how to analyze words for their specific sounds. To teach language without this information is target practice in the dark. Isolation of sounds is necessary for two reasons: (1) it frequently is impossible to teach a sound without first isolating it, and (2) the teacher cannot detect errors if he cannot isolate the specific sounds. Good speech correction today proceeds on the principle that the isolation of the specific sounds in words is both desirable and necessary for retraining of speech production.

Basically two kinds of sound are produced by the human speech mechanism. Phones are sounds that have not become a part of the language. Young children always produce a far greater number of sounds than they later use in the production of speech. Phonemes are sounds that are a part of the language. The English language uses about forty significant phonemes or combinations thereof.

The phoneme has one prime purpose in language. It individualizes human utterances. The phoneme is the smallest unit of language which can differentiate one utterance from another (p. 9).¹² For example, the sentences “Tom, will you wash these carrots?” and “Tom, will you wash those carrots?” are completely alike except for one phoneme. A single letter representing a simple sound changes completely the meaning of the following sentences “A stitch in time saves none” or “There’s no business like shoe business.” “The phonological system of language is therefore not so much a ‘set of sounds’ as it is a *network of differences between sounds*

^{*} Charles Van Riper and Katharine Butler, *Speech in the Elementary Classroom*, © 1955, Harper and Row, Inc. Reprinted by permission.

(p. 24)."¹⁴ The child must learn these differences in speech and later their counterparts in writing. The good reader is one who does know these differences.

THE SPEECH MECHANISM †

Speech consists of the sound waves that are emitted by the human vocal mechanism. These sound waves strike the ear of another and elicit meaning from the recipient. Speech is a circular process. It is completed only when the sound waves (stimulus) elicit a response in a listener, that is, when they stir up meanings in another.

In most communication, and hence language, there is the *intention* to communicate something, the *intention* is then translated or *encoded* into symbols or words, and the necessary sounds are emitted. This latter process is termed *phonation*. The receiver of the communication in turn must hear the sounds (audition), must translate them (decoding), and must comprehend them (pp. 2-4).⁴

Here we are not particularly concerned with how the speaker converts his idea, thought, or concept into sound waves nor how the recipient interprets them. We are interested in understanding the physiological process of speech.

To produce speech the lungs, windpipe, glottis (adam's apple), mouth, teeth, lips, and even the nose may be used. The lungs set the air into motion. The glottis contains the vocal cords. And the mouth contains the soft and hard palate and the tongue (pp. 73-74).²³ The lips are used in producing *b, f, j, m, ch, p, sh, zh, v, w, wh*; the teeth are used in producing *f, s, v, th, z*; the tongue is used in producing *d, g, k, l, n, ng, r, t, y, ch, j, sh, th, zh*; the hard palate is used in producing *ch, d, l, j, n, t*; and the soft palate is used in producing *g, k, m, n, ng*.

THE VOWELS

Children quite early learn to articulate the short and long vowels. Vowels are produced by giving easy passage to the breath of air from the lungs to the outside of the mouth. They are unobstructed sounds. As the air passes along the windpipe, it causes the vocal cords to vibrate. In normal respiration the cords are widely separated at the back side. In producing voiced sounds they are almost closed. As the lungs force the air through the narrow opening, the cords are set into vibration (pp. 19-20).¹¹ The size and shape of the mouth, and the position of the lips and tongue determine what vowel will be produced. For example, the sounds *i* (bit),

* Charles F. Hockett, *A Course in Modern Linguistics*. © 1958, The Macmillan Company. Reprinted by permission.

† For a full description see Hockett (pp. 63-68).¹⁴

e (bet), *e* (the), *a* (bat), *a* (bar), *ea* (beat), *ai* (bait), *ay* (bay), *y* (by), *i* (bite) are produced by spreading or flattening the lips. The sounds *oo* (book), *a* (ball), *oo* (boot), and *oa* (boat) are produced by rounding the lips. The *oy* (boy) or *oi* (loin) sound begins with rounded lips, but ends with flattened lips. The *ou* (thou) sound is just the reverse (p. 77).¹⁴ In Figure 6-1 we have listed the vowels of the English language and the possible spellings of each.

Figure 6-1. Common Vowel Sounds and Variant Spellings *

Symbol	Key Word+	Variant Spellings
a	hat	plaid, ask, chaff.
ā	late	pain, day, break, veil, obey, gauge, eh, ay, chaotic, melee.
ä	far	hearth, sergeant, memoir.
e (ə)	care	there, bear, chair, prayer, heir, e'er.
e	pet	heifer, leopard, friend, Aetna, feather, bury, any, said, says, Thames.
ē	be	feet, beam, deceive, people, key, Caesar, machine, police, field, quay, Phoebe, mete, create, fiasco.
(ə)r	ever	liar, elixir, actor, augur, pressure, glamour, zephyr.
i	bit	sieve, pretty, been, women, busy, build, hymnal, money, cottage, guinea, coffee, carriage, lyric.
ə	(unstressed short i)	separate, senate, always, mischief, circuit, foreign, forfeit, surface, mountain.
ī	ice	vie, rye, height, eye, aisle, aye, sky, buy, choir.
ä	not (short o sound)	was, hough.
ō	off	broth, cost, across, cough, loft.
	all	talk, haul, awe, Utah, Arkansas, law.
ô(ə) } or ō(ə) }	orb	orb, board, sword, court, borne, coarse, before, door, swarm, fought, memoir.
ō	old	oh, roam, foe, shoulder, grow, owe, sew, yeoman, beau, hautboy, brooch, soul, obey.
ə	sun (short u sound)	come, nation, blood, double, does, twopence.
ə	canoe	banana, collect.
ə	fern	bird, urn, work, hurt, heard, journal, myrrh.
u	pull	wolf, Worcester, should, wood, foot, endure.
ü	use	unite, ewe, dew, beauty, feud, queue, lieu, cue, suit, yule.
	rude	brew, do, two, who, tomb, canoe, maneuver, blue, food, group, fruit, proof.
au	out	cow.
oi	soil	boil, oyster.

* Authorities disagree on the articulation of the vowels and consequently also on the number of different vowels. The data and symbolism are based on Webster's Third New International Dictionary, Unabridged, 1961, and Webster's Seventh New Collegiate Dictionary, 1963, G. and C. Merriam Company, Springfield, Massachusetts.

THE CONSONANTS

Consonants are produced by obstructing the air stream. Whenever the constriction in the breath channel is complete and is followed by a sudden release of the air as in *p, b, t, d, k*, and *g*, the consonant is called a plosive consonant. The soft palate is raised so the air does not pass through the nose.

Three of these consonants *p, t, k*, are unvoiced sounds; *b, d*, and *g*, since their production requires the vibration of the vocal cords, are voiced sounds. When the production of the sound involves the use of the lips, as in *p* and *b*, the sounds are labials. When sound production involves the use of the teeth or gum ridges, as in *t* and *d*, the sounds are dental. When the production of the sound involves the use of the soft palate, as in *k* and *g*, the sounds are called gutturals (velars) (p. 74).²³

The fricative or spirant consonants, *f, v, th,* s, z, sh, zh, j*, and *ch*, are formed by partially closing the air passage. These sounds can be prolonged indefinitely and usually are accompanied by friction. To produce the labio-dental fricatives, the unvoiced *f* and the voiced *v*, the upper teeth are in contact with the lower lip. The production of both the voiced and unvoiced dental fricative *th* requires contact between the tip of the tongue and the back of the upper front teeth. To produce the unvoiced *s* the air stream is allowed to pass through a narrow opening between the tip of the tongue and the gums. The front teeth are closed. The voiced *z* requires a slightly larger opening and the teeth are separated. The unvoiced *sh* as in ship is produced much like the *s*, but the air stream is forced over a broader surface than for the *s*. The tongue is raised and drawn back, the lips are rounded, and the soft palate is raised. The *zh* is the same sound as the *sh* except that it is voiced. The unvoiced *ch* is produced by making the *t* sound and quickly exploding it into a *sh* sound. The tip of the tongue touches the upper gum ridge and then is quickly released, freeing a puff of air and producing a *t* sound. This then is quickly changed to the *sh* sound. The sounds *j* and *ch* sometimes are called plosives. More correctly, they are affricates in that they begin as plosives and end as fricatives.

The nasals or linguals, *m, n* and *ng*, are formed by completely closing the mouth and allowing the air to escape through the nose. The soft palate is lowered and each sound is voiced. Closed lips prevent the air from

* *Th* as in then (voiced) and in thin (unvoiced). The unvoiced *th* occurs, for example, in birth, booth, breath, broth, cloth, both, death, depth, doth, earth, faith, fourth, length, mouth, north, and path. The voiced *th* occurs in than, that, their, these, they, therefore, those, thus, bathe, breathe, clothe, scathe, smooth, sooth, with, although, brother, either, father, other, and gather.

passing through the mouth in the production of *m*. For *n* the tip of the tongue is pressed against the gums, and for *ng* the tongue is raised against the soft palate (p. 172).²⁷

The semivowels or glides, *y*, *hw*, *w*, *l*,^{*} *r*,^{*} and *h*, are produced by a gliding movement of the tongue or lips from one place to another. They are produced when the vocal organs are getting ready to produce another sound. The voiced *r* before a vowel as in *rabbit* or *train* is produced by raising the tip of the tongue toward the gum ridge. The teeth are slightly separated. The voiced *l* is produced by elevating the tip of the tongue toward the upper gum ridge. Contact is made, and the air passes over the sides of the tongue. The soft palate is raised for making both sounds. The *hw* is produced like a *w* without vocal cord vibration. It is an unvoiced fricative (p. 174).²⁷ To produce the voiced *w* the lips are rounded and an opening is left for the air to emerge from the mouth. The *w* is like a vowel in that it is pronounced in a vowel position and like a consonant in that it is pronounced with audible friction. *H* generally is an unvoiced sound; *y* is a voiced sound. Like the *w*, the *y* has the position of a vowel but the friction of a consonant. *H* should be sounded with a vowel. When *h* occurs between vowels it may be a voiced sound. The vowel determines the position of the tongue and lips. The air is blown outwards. In Figure 6-2 we have listed the various consonant sounds in the language.

Figure 6-2. The Consonant Sounds of the Language

Plosives		Fricatives		Nasals	Semivowels	
Voiced	Unvoiced	Voiced	Unvoiced	Voiced	Voiced	Unvoiced
b	p	th	th	m	r	h(hw)
d	t	v	f	n	l	
g	k	z(azure)	s	ng	y	
		zh(rouge)	sh		w	
		j	ch			

Language Structure

Language consists of phonemes, morphemes, words, and utterances. Phonemes already have been described. A morpheme is the smallest linguistic unit in our language that has meaning. It has lexical meaning if it has a meaning of its own (for example, prefixes and suffixes) and it has relational meaning if it has a grammatical meaning. For example, in the sentence, "She insists on it," the *in* in *insists* has lexical meaning. It has meaning wherever it occurs; the *s* at the end of the word has no meaning of itself. It has meaning only to the extent that it makes the

* *L* and *r* at the end of a word, as in *water* and *panel*, are not glides.

verb a third person singular. It is said to have relational meaning. The *s* may take on a relational meaning also when it changes a noun from the singular to the plural or when it denotes the possessive case.

Words are the smallest linguistic units that have meaning and that can stand alone in a sentence. The study of how words are constructed is called morphology. An utterance is a series of words that are spoken at one time. The manner in which words are grouped into utterances is called syntax. And syntax and morphology compose the grammar of a language. Figure 6-3 illustrates the relationships existing between the various factors.

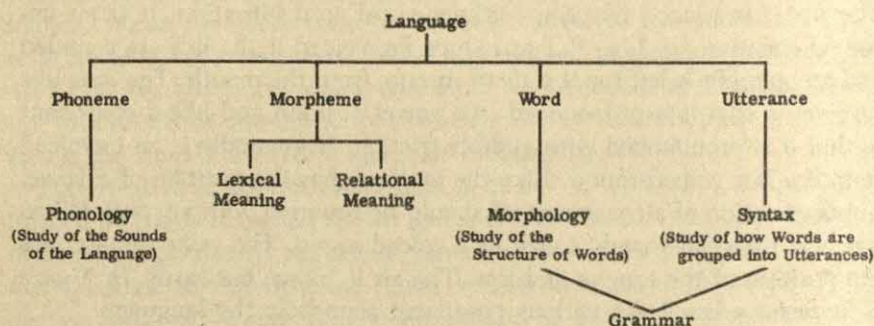


Figure 6-3. The Components of Language

Grammar has only one basic function: to make our utterances clearer. It is an aid to the expression and interpretation of meaning. Morphology, for example, allows us to introduce minute changes into the word to bring out a special meaning. The various uses of *s* given above are examples of this. Syntax permits us to group words to suggest certain nuances of meaning. For example, the same words might be grouped in this way to suggest various meanings: "The weak girl is playing a game of tennis," or "The girl is playing a weak game of tennis"; "The boy sat in a chair with a broken arm," or "The boy with a broken arm sat in a chair"; "The lion in the cage roared at the man," or "The lion roared at the man in the cage." Punctuation in writing and pauses in speech are not so much an aid to writing and speaking as they are to reading and listening. The writer knows what the sentences mean; he does not need grammatical aids to get the meaning.

In addition to phonemes, morphemes, and words there are certain characteristics about the utterance that add to and develop meaning. The loudness of the voice changes or certain words are stressed more than others. We give a heavy, medium, light, or weak stress. The pitch is either low, normal, high, or extra high. High pitch is often associated with heavier stress. In speaking, utterances are combined by what are

termed "plus junctures"; they are ended by "terminal junctures."²¹ The plus junctures separate words; the terminal junctures are usually accompanied by falls or rises in pitch, and differentiate one phrase unit from another or one type of sentence from another. The declarative sentence has a slight drop in pitch at the end. Phrasing depends on the placement of the junctures.

Words do not give meaning to sentences; rather, words receive their meaning from the sentence or the verbal context of which they are a part. The pupil who has become a word reader has fallen into the error of not "reading" the phrase unit that gives meaning to the word. The word must be looked upon merely as *one* element in a series of elements that constitute a sentence. The sentence circumscribes the word, giving it the distinct meaning intended by the speaker or writer. The word "run" means many things dependent upon its usage in the sentence. Its meaning depends also upon the structure of the sentence.

Lloyd²¹ notes that reading instruction should begin with familiar materials, materials that represent the child's speech. In this way the child learns that what he says can be written and read. The implications for beginning with experience charts in teaching reading are obvious.

The broader implications of a linguistic approach to reading seem to be:¹⁸

1. Children should learn to read the language they already speak.
2. Efficient reading means an awareness of the spoken language structures represented by the graphic language.

Perhaps we have too long ignored the meaning-bearing language patterns. We may not have paid enough attention to the child's need to perceive language structures as wholes for *total comprehension*.¹⁸ Teachers of reading may need to become more familiar with the structure of the language.

Thus far we have concerned ourselves with the individual sounds of the language—the consonants and vowels, with the teaching of the accurate production of the individual sounds or phonemes, the accurate pronunciation and articulation of the sounds of total words, and with language structure.

What are the implications of all this for reading? If the pupil cannot sound the individual phoneme, he probably will not be a good oral reader. He will have difficulty with phonics. He also may have difficulty in transmitting meaning.

The child's proficiency in reading, and certainly his word identification and recognition skill, is dependent upon his ability to articulate, enunciate, and pronounce the sounds met in his language.

Furthermore, genuine reading proficiency may mean the ability to read language structure. The best reader may be one mentally aware of the

stresses, elongations of words, changes of pitch and intonation, and rhythms of the sentences that he reads. If he reads what was spoken the way the writer would like it to have been said, true communication of meaning may be possible. As Buswell (p. 114) ⁵ notes:

The first goal is to enable the child to derive meaning from the printed verbal symbols at the same level of functional efficiency that he has already attained in getting meanings from spoken words. The child has learned to interpret speech at functional level before entering school. The first obligation of the reading class is to produce this same efficiency with respect to the visual perception of print. There is no substitute for this ability; this is a first obligation.*

Errors in Speech

The remainder of this chapter is devoted to a description of speech defects, to their causes, and their remediation. In most reading courses this is not covered. However, children with reading problems frequently also have speech problems. And these affect their performance in general learning, in oral reading, and in the learning of phonics. The child is at a disadvantage in learning to read because he cannot associate sound with its appropriate letter or word. It may be that some children will not learn to read well until they have corrected their speech difficulties.

Many children do not develop normal speech patterns. Even a very conservative estimate (p. 6) ¹⁷ suggests that approximately one and one-half million children between the ages of five and seventeen have speech defects. These chiefly are disorders of articulation, but include disorders of voice, disorders of rhythm (stuttering and cluttering), cleft palate and cleft lip speech, cerebral palsied speech, and aphasic speech.

ARTICULATORY DEFECTS

Articulatory defects are by far the most common. They are speech deficiencies characterized by the imperfect production of phonetic elements, and are accompanied by distortions, additions, substitutions, or omissions of certain speech sounds. Lipping is an example of a speech distortion. Cleft palate speech, delayed speech, and speech characterized by foreign dialects are classified as articulatory defects.

The average child of eight years of age is able to articulate 90 to 95 per cent of the sounds needed in speech. Some children, however, engage in baby talk, indistinct speech, tongue twisting, or lipping. These defects may confuse the child because the words sound one way when he says

* Guy T. Buswell, "The Process of Reading," *The Reading Teacher*, 13 (December 1959) 108-114. Reprinted by permission.

them and another way when he hears them spoken by someone else. This frequently leads to faulty word recognition and comprehension in reading. In Figure 6-4 we have listed some common articulatory errors.

Figure 6-4. Common Articulatory Errors

-
1. Addition of speech sounds—"athelete" for athlete, "chimaney" for chimney.
 2. Distortion of speech sounds—"Shishter" for sister. This occurs in lateral lisps when the air escapes over the sides of the tongue.
 3. Omission of speech sounds—"baw" for ball, "kool" for school, "tink" for think, "wat" for what, "sining" for singing.
 4. Substitution of speech sounds—"fumb" for thumb, "wawipop" or "jajipop" for lollypop, "tap" for cap, "dive" for give, "wed" or "jed" for red, "doe" for go, "twy" for try, "choe" for shoe, "toap" for soap, "thoap" for soap, "shoap" for soap, "wery" for very, "ketch" for catch, "fink" for think, "jike" for like, "kin" for can, "bat" for bad, "bak" for bag, "tite" for kite.
 5. Transposition of speech sound—"aks" for ask.
 6. Slurring of speech sounds—not giving enough duration to the sound.
 7. Delayed speech—inappropriate for the child's age level.
 8. Foreign or regional dialect or accent—"thoid" for third.
-

Errors of articulation may result from faulty sound discrimination, missing or misarranged teeth, a high or narrow hard palate, a sluggish or too large tongue, cleft palate, cleft lip, retarded speech development, or cerebral palsy (p. 7).¹⁵ Occasionally articulatory defects may be symptomatic of personal or emotional problems. Frustration with early attempts at speech may hinder normal development. Parental pampering, parental encouragement of baby talk, or inadequate speech standards in the home may lead children to develop carelessness in speech.

Children also frequently do not use the speech equipment that they possess. Many errors in articulation stem from lazy and indolent jaws, lips, tongue, or soft palate. The child drops end consonants, especially *t*, *d*, and *ng*; frequently changes *t* to *d* as *dudy* for *duty*; and uses contractions such as *woncha*, *lemme*, and *gimme* (p. 26).²⁸ To overcome this children should be encouraged to dramatize stories requiring them to yawn, whisper, or shout. They should overemphasize lip movements and should engage in choral reading and speaking. Tongue twisters such as "Peter Piper picked a peck of pickled peppers" are especially helpful.

Delayed speech is associated with multiple factors. Lesions in the dominant hemisphere, shifts in handedness, confused hand preference, impaired hearing, mental subnormality, paralysis, or lack of speech stimulation in the home are commonly associated with it. Parents may delay the child's speech development by inadvertently punishing his early speech production. Intense shock, fright, or shame associated with the production of speech may keep the child from making further attempts. Sometimes the child is allowed to form a relationship with his parents

and siblings that does away with the need for speech. Twins are said to be at a disadvantage in speech production because they get along with each other and understand each other so well that they frequently are not motivated to learn to speak.

Teaching the child with delayed speech generally consists of three phases.³¹ The teacher helps him to develop concepts by teaching him that objects or activities have names. The pupil must learn that ideas and objects are related, but that they are not the same. The pupil must be taught simple sounds. The teacher begins with words that are easy to say. Finally, the pupil must learn that language is used to symbolize simple experiences. He is taught his own name, the names of his closest friends, and the names of common objects and activities in his environment.

Lisping is an example of distorted speech. It is of two kinds: *frontal* as when *th* is substituted for *s*, or *lateral*. Frontal lisping occurs when the child, while attempting to make the *s* sound, allows the tongue to protrude between the teeth. Lateral lisping occurs when the child makes the *s*, *sh*, and *ch* sounds inaccurately by allowing the air to pass over the sides of the tongue. Lisping also may be due to faulty occlusion between the upper and lower teeth, to loss of the front teeth, to hearing defects, or to malformation of teeth or jaws. To overcome the habit the child must close his teeth tightly, and the tongue must remain inside the mouth. The air is then blown through the teeth.

Children with *foreign language backgrounds* frequently have difficulty with *j*, *l*, *r*, *w*, *wh*, *ch*, and *th*. They substitute an unvoiced sound for a voiced sound at the end of a word. Thus hand, band, and land become "hant," "bant," "lant." A French child falters commonly on *th*, *wh*, and *ch*; the German child stumbles on *wh*, *th*, *j*, and short *u*; the Hebrew child says *sink* for *sing*, *lem* for *lame*, and *vot* for *what* (p. 244).³⁴ These children must be encouraged to imitate good speech. The informal contacts that these children have with other children may well be the best speech therapy. Choral speaking and choral reading also are effective.

These children commonly have communication problems. Usually their vocabulary is inadequate. They cannot express their ideas because they do not know the appropriate words. They often lack the experiential background needed for communication in American schools. A program of correction must attack these inadequacies by broadening the child's experiences and by enlarging his vocabulary.

In general, the teacher must be concerned with accurate production both of the individual phoneme and of the word. Although not all children need training in these skills, the teacher must be prepared to handle articulatory problems when they appear.

A good program for teaching the phoneme is outlined by Van Riper and Butler³⁵ and would seem to include the following elements:

- (1) The teacher identifies each sound with a sound in the child's environment. (*S* is described as sounding like air going out of a tire, like the sound of a whistling teakettle, or like the hissing sound coming from an oxygen tank.)
- (2) The teacher gives the sound a name. (*S* is known as the "whistling teakettle sound," *ch* is the "choo-choo train sound," and *z* is the "buzzing bee sound"; *B* may be the "bubbling sound"; *M* is the "cow sound"; *T* is the "ticking watch sound"; *G* is the "angry dog sound"; *U* may be the "hooting-owl sound"; and *ou* may be the "crying baby sound" or the "ouch sound.")
- (3) The teacher identifies the sound with a picture.
- (4) The teacher develops the placement of sound in the mouth.
(Not all children need to have training on this last point.)

Most writers on speech improvement are more concerned with the production of the whole word than the production of the individual phoneme. Eastman,⁹ for example, developed speech improvement activities around the "game" idea.* The following techniques seem especially useful:

1. Grocery Store Technique: Children bring cartons, boxes, cans, and bottles, and set up their own toy grocery. Using toy money, the child with *s* trouble buys items that have *s* in their names, such as salt, soap, soup, mustard, or salad dressing. To be able to buy the item the child must articulate the word correctly.
2. Circle Technique: A circle on the blackboard is divided into a number of sections. Each section contains one or more difficult words. With eyes closed the child points at the circle, saying: "Round and round I go, and when I stop, I stop here." He opens his eyes and attempts to pronounce the word or words on which his pointer landed. Correct pronunciation of the words in the block gives the pupil a point and another turn. A simple wheel with a pointer may be a more suitable device.
3. The Grab Bag Technique: Objects with the sound in their name to be exercised are placed into a bag. In the *th* bag, for example, are a clothespin, birthday card, feather, thimble, a piece of leather, or a mouth organ.
4. The Question Technique: Questions may be asked that call for answers requiring the speaking of the sound to be learned. For example, in teaching the *s* sound, the following questions are appropriate:
 1. "The number after six is _____." (seven)
 2. "The grocer put the potatoes in a _____." (sack)
 3. "He washed his dirty hands with _____." (soap)
 4. "Cotton is not hard but is _____." (soft)
 5. "After Friday comes _____." (Saturday)

* The ultimate criterion is not whether the pupils are enjoying the game, but rather whether they are learning. The activity must be speech-centered. The game should be more than a mere game.¹⁷ Too often games are merely for amusement. Teachers, for example, frequently use word games that are filled with new and strange words rather than with the words that the child is presently encountering in his text. If the game is to be effective, the child must understand the purpose of the game.

Let us say a few words about grammatical usage. Many five- and six-year-old children (and indeed two-year-olds) know the mechanics of grammar in a practical way. They can form sentences or utterances, handle subjects and predicates, and punctuate their spoken sentences by pauses and inflections.⁶ Without the benefit of formal instruction, they apply the rules of grammar in their speech. One doesn't have to be a linguist to use language effectively.⁸ In fact, it is not even necessary to be a linguist to use grammar correctly. After all, grammar is merely a summary, synopsis, a history, as it were, of the verbal habits of the speakers of the language. Today, we do not approve of "he don't." Tomorrow it may be correct.⁷

Students of language have always questioned the value of formal grammar instruction on the speech of pupils. For example, what effect does the ability to discriminate between the gerund and the present participle have on the speech of the pupil? Studies^{8, 27} generally indicate that there is little, if any, value in formal instruction before the child has developed a certain amount of grammatical correctness in his everyday speech. In fact, it is doubtful that sentence analysis, parsing, and diagramming have any place in the elementary school. Grammar is the professional tool of the linguist, editor, and copyreader but hardly of the elementary pupil (p. 358).³³ "Grammar supports usage at the point when the child can grasp a generalization and apply it accurately to particulars (p. 224)."^{9 24} The early grades generally lay the foundation for grammar, but principles, generalizations, and definitions are left for the junior high and high school years (p. 230).³⁴

Thus, our teaching of grammar must be inductive. We must begin with the particular and gradually develop a principle. We must concentrate on actual errors made by children, not on hypothetical errors. We must motivate the child to want to develop acceptable speech. We get the child to practice correct usage. We stress correctness in expression rather than the elimination of errors.

Authorities generally recommend that the elementary-school child should not be interrupted while speaking even if his usage is incorrect. Correction by other children may be especially harmful to the child. It may rob him of the confidence that he has developed with much difficulty.

The emphasis of instruction should be on those errors that distinguish the child's speech from those of others in his milieu, that occur most frequently, or that impede communication. Pooley (p. 180)†²⁴ lists some

* Robert C. Pooley, *Teaching English Usage*. Copyright 1946, National Council of Teachers of English, published by Appleton-Century-Crofts. Reprinted by permission.

† *Ibid.*

of the common errors that should be overcome in the elementary school: They are: *ain't* or *hain't*; *hair are*; *a orange*; *have ate*; *he begun*; *was broke*; *he brung*; *climb* (short i); *clumb*; *he come*; *have did*; *he, she, it don't*; *I drunk*; *didn't*, *hadn't* ought; *was froze*; *he give*; *I got* for *I've got*; *my brother, he*; *her, him*, and *me* went; *hissself*; *there is, was* four; *knowed*, *growed*; *learn* me a song; *leave* me go; *me* and *Mary* went; *haven't no*, *haven't nothing*; *he run*; *have saw*; *I says*; *he seen*; *them* books: *theirselves*; *this here*; *that there*; *us* boys went; *we, you, they was*; *with we* girls; *have went*; *have wrote*; and it is *yourn*, *hern*, *ourn*, *theirn*.

In another article²⁶ Pooley lists in sequential order the usages that should be developed or eliminated by the pupil as he progresses through the grades. The program should provide for:

1. The elimination of all baby talk and "cute" expressions.
2. The correct use of *I, me, he, him, she, her, they, them*. (Exception, *it's me*.)
3. The correct uses of *is, are, was, were* with respect to number and tense.
4. Correct past tenses of common irregular verbs such as *saw, gave, took, brought, bought, stuck*.
5. Correct use of past participles of the same verbs and similar verbs after auxiliaries.
6. Elimination of the double negative: *We don't have no apples*, etc.
7. Elimination of analogical forms: *Ain't, hisn, hern, ourn, theirselves*, etc.
8. Correct use of possessive pronouns: *My, mine, his, hers, theirs, ours*.
9. Mastery of the distinction between *its*, possessive pronoun, and *it's*, it is.
10. Placement of *have* or its reduction to *'ve* between *I* and a past participle.
11. Elimination of *them* as a demonstrative pronoun.
12. Elimination of *this here* and *that there*.
13. Mastery of use of *a* and *an* as articles.
14. Correct use of personal pronouns in compound constructions: as subject *Mary and I*, as object *Mary and Me*, as object of preposition *to Mary and me*.
15. The use of *we* before an appositional noun when subject, *us* when object.
16. Correct number agreement with the phrases *there is, there are, there was, there were*.
17. Elimination of *he don't, she don't, it don't*.
18. Elimination of *learn* for *teach*, *leave* for *let*.
19. Elimination of pleonastic subjects: *my brother he; my mother she; that fellow he*.
20. Proper agreement in number with antecedent pronouns *one* and *anyone, everyone, each, no one*. With *everybody* and *none* some tolerance of number seems acceptable now.
21. The use of *who* and *whom* as reference to persons. (But note, *Who did he give it to?* is tolerated in all but very formal situations, in which *To whom did he give it?* is preferable.)

22. Accurate use of *said* in reporting the words of a speaker in the past.
23. Correction of *lay down* to *lie down*.
24. The distinction between *good* as adjective and *well* as adverb; e.g., *He spoke well*.
25. Elimination from writing of *can't hardly*, *all the farther* (for *as far as*) and *Where is he (she, it) at?*^{*}

In correcting errors it is wise to work on a few errors at a time. Children in the primary grades may develop their own grammars by listing the errors they are prone to make and by noting the correct usage.

Why are articulatory defects a concern of the teacher? Articulatory defects interfere with the child's reading since the pupil will make incorrect associations between the written and spoken sound, and between the grapheme and the phoneme. Instruction in phonics becomes a liability rather than an asset in reading.

VOICE DISORDERS

Voice disorders of one kind or another are common among children. These frequently are functional in nature. They have arisen from habits that with proper guidance may be changed. The pitch † may be too high, too low, or a monotone; the volume is either too soft or too loud; ‡ and the quality may be too nasal, too hoarse, too breathy, too husky, too metallic, or too muffled.

Pronovost (p. 111)²⁷ points out that the child must develop five vocal skills. These are:

1. A pleasing voice quality
2. Adequate volume
3. Variety in duration of words
4. Appropriate phrasing and smoothness
5. Variety of pitch §

A pleasant voice is free from nasality, huskiness, monotony, harshness, or breathiness. A pleasant voice is characterized by freedom from vocal tension. Children develop vocal tension when they speak too loudly or at a too high pitch. In other cases vocal tension is a sign of emotional problems. The teacher develops vocal ease by overemphasizing the con-

^{*} Robert C. Pooley, "What Is Correct English Usage," *NEA Journal*, 49 (December 1960) 17-20. Reprinted with permission.

† Pitch represents the number of vibrations or cycles per second as recorded on the oscillogram.

‡ The loudness of voice depends on the intensity as measured by the physical energy caused by the vibrating column of air (p. 194).³

§ Wilbert Pronovost, *The Teaching of Speaking and Listening*, © 1959, Longmans, Green and Company. Reprinted with permission, courtesy of David McKay Company, Inc.

trasts in voice quality, especially the contrasts of extreme tension or exaggerated relaxation.

To be an effective speaker the pupil also must use adequate volume. Volume naturally is dependent upon the situation. However, when the voice is too loud or too soft, the child's hearing should be checked. A soft voice, when there are no physical complications, may be symptomatic of insecurity; a loud voice may indicate aggressiveness.

The child must learn to prolong words to the required length. Some words are spoken quickly and some more slowly. The meaning that we expect words to convey frequently depends on how much emphasis is given to certain words by prolongating or shortening the vocal response.

The pupil must learn to join the words or the sounds, making up phrases into an orderly time sequence.¹¹ Phrases generally are separated by pauses. The phrase is the unit of thought in our language.

Finally, the student must develop an appropriate pitch.

Variety of pitch occurs as inflections and pitch shift. An inflection is a gliding change of pitch during a word, such as is heard in a cheery "hello." A shift is a quick change of pitch from one word to another. In the phrase, "come here!" the pitch will shift upward between the two words if the word "here" is emphasized (p. 141).^o 27

Pitch often is associated with the accent or stress that is put on words of two or more syllables. The accent or stress helps to keep words apart, for example, in valid and inval'id. It also helps to distinguish between questions, exclamations, and statements. This we call sentence stress or intonation. Intonation is the melody pattern of a language, and each language has its own characteristic pattern. For example, the declarative sentence in our speech has a downward intonation. The question has an upward intonation.

Voice disorders will most directly affect the pupil's oral reading. However, from a linguistic point of view, a much more serious defect is present. If the child cannot phrase properly, if his emphasis on words is wrong, if the pitch and intonation are improper, the child probably will not read with *full meaning* the sentence or total language structure.

DISORDERS OF RHYTHM

The third major group of speech disorders consists of disorders of rhythm. The two major disorders here are stuttering and cluttering. Stuttering is relatively common. It is hesitant speech accompanied by muscle spasms of the throat and diaphragm and results in an inability to

^o Wilbert Pronovost, *The Teaching of Speaking and Listening*, © 1959, Longmans, Green and Company. Reprinted by permission, courtesy of David McKay Company, Inc.

produce voiced sounds.¹³ Emery¹⁰ says that stuttering consists of abnormal nonfluencies in speech that are accompanied by prolongation and repetition of sounds and words, by excessive pauses, and by partial or complete blockages of speech. The stutterer may repeat the initial letter as "b-b-b-bat," or he may repeat the first word in a group of words, as for example, "my-my-my bat."

Today stuttering is viewed as an *intermittent* activity that sometimes characterizes the speech of a person.¹⁹ A person is not a stutterer 100 per cent of the time. Stuttering generally is identified between the ages of two and four, at which time the symptoms are not greatly different from the repetitious speech of normal children.

Stuttering may be caused by hurry, competition, excitement, fear of rebuke, and by the need to communicate something unpleasant. At this stage it is in its simpler form. In the more advanced forms the child develops a fear of sounds, words, and speaking.

Psychologists have offered a variety of explanations for stuttering. Among these are deviations in the shape, size, and length of the palate or tongue, dental irregularities, overshot or undershot jaw, motor retardation, reversal of cortical dominance, cerebral lesions, feelings of inferiority, and fear of speaking.

Generally, the theories on the etiology of stuttering are grouped in this way:

- (1) those which stress that stuttering is caused by an unconscious wish or need to stutter
- (2) those which suggest that the neuromuscular activity required for smooth speech breaks down under emotional or constitutional stress
- (3) those which suggest that stuttering results from a conscious attempt to avoid stuttering and that the listener-speaker relationship is a vital element.

Karlin,¹⁶ for example, suggests that it may be due to delayed myelination of the cortical association areas involved in speech. Lindsley²⁰ reports that the alpha rhythm of stutterers is out of phase in both hemispheres* and indicates that there is more unilateral blockage† when the individual is speaking than when he is silent. Wendell Johnson suggests that stuttering may develop because of parental disapproval of "normal nonfluency." He points out that the average child of five to eight is nonfluent approximately sixty times in every 1000 spoken words. Naylor²² suggests that the stutterer, afraid of stumbling over a word,

* This means that the peaks of the waves from each hemisphere as recorded on the encephalographs do not coincide.

† Unilateral blocking is the absence of alpha waves on one side of the head. The rhythm on the opposite side is observable.²⁰

stops his forward movement and repeats. Too much regression in reading may be a similar difficulty. Vernon (p. 99) ³⁶ states that speech defects may be more common among completely left-handed individuals because such children have been under pressure to change from the left to the right hand. Rotter ³⁰ suggests that pampering predisposes the would-be stutterer to use stuttering as a rationalization for failure. He believes that stuttering is a speech disorder in a person who perceives his speech as being different from that of others and as being a handicap to him.

In less severe forms of stuttering the child is encouraged to speak when he is fluent, and his speech needs may be controlled when he is stuttering. Many children at this stage are not even aware of their difficulty, and certainly they should not be made aware of it if it can be avoided. In more advanced stages children are aware of their handicap. The teacher commonly controls all situations that would bring ridicule upon the pupil. Nevertheless, the pupil should be brought to face the problem frankly while he is developing confidence in handling speaking situations.

It seems unwise to interrupt the child, to tell him to speak more slowly, to say the word for him, or to criticize him. Even to praise him for fluent speech may only increase his fear of speech. It indicates disapproval of nonfluency. The teacher should accept him for what he says rather than for how he says it. He must teach him that stuttering is not something that the person *is*; it is something that the person *does* (p. 36).²²

The average stutterer does not have merely a mechanical speech problem. He needs parents' and teachers' understanding. Teachers must stress his assets rather than his liabilities. They set goals for him that are attainable. They do not force him to engage in a situation, such as reading aloud, which is too stressful for him. They attempt to restore his self-confidence. The stutterer needs to feel enough security so that he can stutter without self-devaluation. In fact, if he is ever to overcome stuttering, he must do it *while stuttering* (p. 36).²² He must learn to accept that to stutter is permissible.

CLUTTERING

Cluttering is rapid speech characterized by slurring and distortion of words. The speech runs together, the sounds and syllables are slurred, the speed is excessive, and the flow of words is irregular.¹⁰ The speech is jerky, stumbling, and explosive, and is characterized by an erratic rhythm. The clutterer does not coordinate his thinking with his speech. Cluttering may be caused by insecurity or by fear of being interrupted. The pupil should be encouraged to slow down. He may be aided in slowing down by a prolongation of the vowel and the consonant sounds.

Cleft Palate and Cleft Lip

Cleft palate speech includes excessive nasality in addition to articulatory defects. A child with this condition may have particular difficulty in producing the sounds for the letters *f*, *v*, *s*, and *z*, and less difficulty with *p*, *b*, *t*, *d*, *k*, and *g*.

Cleft palate and speech disorders accompanying cerebral palsy have specific organic bases. Cleft palate and cleft lip speech consists of

... imperfections in voice, articulation and fluency or rate. In cleft palate the structures which normally form the roof of the mouth have failed to join properly. As a result, air passes too freely between the oral and nasal chambers. Moreover, the action of the tongue and the throat muscles is influenced in ways that affect speech. The speech tends to be nasalized and the articulation is affected. There is difficulty in building up breath pressure for the sounds of *p*, *b*, *t*, *d*, *k*, and *g*, often with a resulting plosive character of the nasal emission of air. Other sounds, too, particularly those of *s* and *sh*, are commonly distorted.

The cleft may be slight or extensive. Although it may affect only the hard palate, it sometimes extends through the gum ridge at the front of the mouth and the lip may also be divided. In some cases the cleft extends back to the soft palate and velum; the soft palate may be short, divided, or absent (pp. 9 & 10).¹⁵

Cerebral Palsied Speech

The speech of the cerebral palsied child is labored, slow and jerky. The voice is monotonous and not too well controlled. The sounds are not articulated correctly. Because of impaired muscle coordination the speech is distorted (p. 11).¹⁵

Aphasic Speech

Aphasia is a defect in the central nervous system that may be accompanied by inadequacies in language expression and/or understanding. When the condition occurs in children, it is now termed oligophasia.

Receptive oligophasia is a disturbance in auditory perception of sound. Expressive or motor oligophasia is a disturbance in recognizing and forming phonemic patterns and translating them into speech. And central oligophasia is a disturbance of symbolization. In this instance words cannot be used to deal with ideas and concepts (p. 110).³² We still speak of a writing disturbance as *agraphia* and of a reading disturbance as *alexia*.

Generally, the oligophasic child should be taught to speak through

* Wendell Johnson, *Children with Speech and Hearing Impairment*, Department of Health, Education, and Welfare Bulletin 5 (Washington, D.C.: Government Printing Office, 1959). Reprinted by permission.

a phonetic approach. The child must learn the sounds one at a time. He must become familiar with the articulatory position of each sound. Gradually he must combine the separate sounds to form a complete word.

Teaching the oligophasic or brain injured child to read has its own problems. He has a tendency to confuse similar letters, *b-d*, *p-q*, *m-n*, *m-w*, *b-p*, *n-u* and similar words, *there-their*. He does not organize the letters of words in their proper sequence, and thus makes frequent reversal errors, *tap-pat*, *was-saw*. He has difficulty with short vowels and with similar-sounding consonants, *s-z*, *p-b*, *f-v*. Sometimes he cannot isolate the sounds in words. He cannot sound the initial sound in a word, its end sound, or characteristic vowel sound. The oligophasic tends to transpose letters and syllables in words. Thus, *animal* becomes *aminal*. Finally, the brain injured child frequently cannot blend sounds into words. If the *bl* in *blend* is separated by the teacher from the *end*, the pupil cannot unite the two parts to form a whole.

Summary

In this chapter we have examined the phonological system of language and language structure, and have offered some suggestions for the development of accurate reproduction of both the individual phoneme and the word. We discussed the major speech defects and suggested procedures for dealing with them. This chapter in a sense concludes our survey of the various factors related to reading readiness and achievement.

Chapters 3 and 4 were concerned chiefly with the characteristics that the child brings to school. We delved into the significance of the child's intellectual, physical, physiological, emotional, and social development. In Chapter 4 we commented briefly on the importance of the instructional program. In Chapter 5 we related listening and speaking proficiency to reading achievement and suggested means for improving the child's listening skill.

The justification for Chapters 5 and 6 is the same as for any of the other chapters. The reading teacher must possess any and all knowledge that will improve his teaching, and that will lead to better reading by the pupil. The better the speech, the more successful a reader the child tends to be. The more readily the teacher can detect and correct the child's speech difficulties, the more successful his teaching of reading should be.

Questions for Discussion

1. Take one basic language sound and discuss how you might isolate it for the child, and how you would initiate and maintain a program of instruction that will eventually lead to its mastery by the pupil.
2. Illustrate by example the argument that the word receives its complete meaning only from the structure of the sentence in which it is embedded.

3. Identify the five most common misuses of grammar in your classroom, and discuss ways of helping the pupil to correct his mistakes.
4. What is meant by speech improvement? Why is it important that the pupil be able to speak words fluently before he reads them?
5. What is the purpose of the phonological system of a language?
6. Describe the physiology of vowel production.
7. Describe the physiology of five different consonant sounds.
8. How might a short talk be used to improve the child's skill in the mechanics of speech as well as in the communication of content?
9. Categorize the various errors in speech.
10. How are errors in speech related to reading proficiency?

Basic Principles

1. The isolation of specific sounds in words is both desirable and necessary for retraining of speech production.
2. The phonological system of a language is a network of differences between sounds (p. 24).⁹
3. Grammar is merely a summary, a synopsis, a history, as it were, of the verbal habits of the speakers of the language.
4. Knowledge of grammar has a positive effect on speech only after the child can generalize and make applications of the general principles to particulars.
5. Speech defects tend to be positively associated with faulty word recognition, with poorer comprehension, and with poorer reading achievement.
6. Speech defects have a greater negative effect on oral reading than on silent reading performance.
7. The emotional reaction to the speech defects may have a greater effect on achievement than the defect itself.
8. The more numerous and the more serious the articulatory defects, the greater is their effect on reading development.

7

DEVELOPING READING READINESS

Reading readiness has been defined as the developmental stage at which constitutional and environmental factors have prepared the child for reading instruction. Chapters 3 and 4 discussed the myriad of factors, both constitutional and environmental, that may interfere with the child's readiness for reading. Chapters 5 and 6 discussed the importance of listening and oral language for reading readiness and achievement.

Reading readiness also may be described as the teachable moment for reading. The reading teacher realizes that it is not enough to know the factors that promote or prohibit adequate reading performance. He must examine the composite of factors and on the basis of them must identify each pupil's specific readiness for reading. The reading program must be individualized for each pupil.

Perhaps it would be valuable to enumerate the significant principles of readiness. Educational psychologists list the following:

1. Children generally become ready for specific learning tasks at different ages.
2. The child develops skills most readily if they are built upon the natural foundation of maturational development. Children put most effort into tasks that are neither too difficult nor too easy, that are within their "range of challenge"—that are possible for them but not necessarily easy.
3. Children should not be forced into readiness training before maturational development is adequate. Such premature training may lead to no improvement, to only temporary improvement, or to actual harm. Premature training may destroy the child's natural enthusiasm for a given activity and it is doubtful that drill and exercises will ever be a substitute for maturation.

4. Generally, the more mature the child is, the less training is needed to develop a given proficiency.
5. The teacher can promote the child's readiness by providing for gaps in his experience.

Let us say a few words about maturation or genetically determined growth. Too frequently it is confused with learning or environmentally induced growth. Maturation and learning are distinct concepts even though it commonly is impossible to identify the influence of each in any given learning situation. Harris (p. 3)¹⁷ aptly notes that "Without maturation the child cannot learn; without experiences he has nothing to learn." *

Maturation changes usually are orderly and sequential. Wide variations of environmental conditions have little effect on maturation. Thus, the nervous system develops regularly according to its own intrinsic pattern. In learning to walk, the child goes through the following stages: he learns to raise his chin and chest, to roll, to sit, to stand with help, to crawl, to pull himself up, to walk when led by another, to stand alone, and to walk alone. Even during this first year of life, however, individual differences are existent.

Because of this orderly and sequential change, there is very little benefit in rushing the maturational process. For example, we don't teach the child to swing a bat before he is capable of lifting the bat. The child learns to talk only after he is old enough. And the average five-year-old child can be taught to read, but the learning frequently is unstable and may be entirely lost. Postponing the process until the child is older seems less wasteful of teacher time and pupil effort and does not handicap the pupil later. Olson's concept of "pacing" suggests that it is an error to expect more from the child than he is capable of giving.

Readiness programs, however, are not thereby useless. Children need appropriate environmental stimulation if maturational development is to progress at an appropriate rate. In many instances the child has inadequacies in his experiential background, and the child benefits greatly from readiness experiences. The teacher cannot overemphasize either maturation or experience learning. Too much emphasis on maturation may lead to useless postponing of what could be learned; too much emphasis on learning or experience may lead to futile attempts at teaching that for which the child is not ready.

Although the average age for reading readiness has dropped in the last generation, very few average or above average five- and six-year-old children are ready in every respect for formal reading instruction. In

* Albert J. Harris, *Effective Teaching of Reading*, © 1962, David McKay Company, Inc. Reprinted with permission.

one way or another almost every child can be helped to become more ready for instruction.

Reading readiness usually does not come at the same age for the share-cropper's child as for the college teacher's son; but even the professor's son may not be fully ready. In this chapter we are concerned particularly with those readiness elements that can be and usually are developed through classroom instruction.

It is not easy to list in sequence the major skills and attitudes that must be developed in the kindergarten and early first grade. However, research and experience indicate that for success in reading the child either should possess, or should develop in school, certain minimum levels of proficiency in a number of areas. The teacher of reading cannot forget that some children come to school perhaps fully prepared for reading. A readiness program for these children may be only harmful.

The first requisite for beginning reading is an interest in reading. Children generally come to school wanting to learn to read. When they have discovered that what can be said also can be written, they show an even greater interest. The most frequently repeated phrase during the readiness period is: "What does it say?" Unfortunately, this interest in reading is not necessarily self-perpetuating. The teacher must actively foster it by making available picture books on various topics. He must ask children to bring books to school and share them with other children. He must read stories to children. He must let children dictate simple experience charts. He must keep the bulletin board full of short readable messages. The objects in the room should be labelled.

After the child's interest has been obtained, major teaching tasks remain. The readiness skills that must be developed through classroom instruction include the following:

1. Training in concept formation
2. Training in auditory discrimination
3. Training in visual discrimination
4. Knowledge of the alphabet
5. Training in left-to-right progression and in reading on a line
6. Skill and know-how in handling a book
7. Acquisition of a sight vocabulary
8. Ability to associate meanings with printed symbols
9. Independence in working out the pronunciation of words

Figure 7-1 illustrates the various facets of the readiness program.

A good readiness program is directed toward the development of proficiency in these areas. The pupil must develop proficiency in each area in the day to day activities in the classroom. In this chapter we have suggested means for developing six of the nine skills. The development of sight vocabulary, the development of independence in word identi-

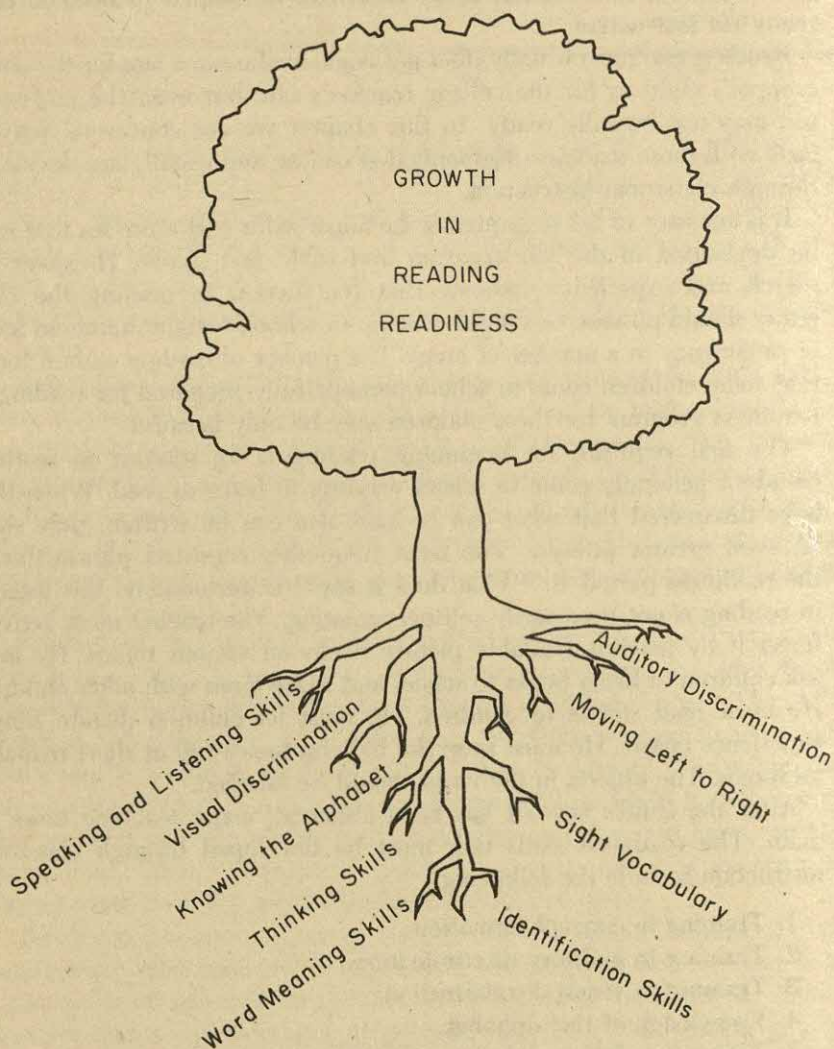


Figure 7-1. The Readiness Tree

cation, and the development of skill in word interpretation are left for later chapters.

The Development of Concepts

Chapter 2 emphasized the importance of conceptual experience for successful reading. It was suggested that:

1. Children learn to conceptualize.

2. Depth and variety of experience are necessary for conceptual development.

In Chapter 11 conceptualization is described as a process involving the following stages of development:

1. Actual experience with the concrete object, person, or event.
2. Accurate discrimination of essential and nonessential characteristics in objects.
3. The formation of the concept.
4. The formation of categories—grouping the individual experiences into classes.

In Chapter 12 it also is suggested that the development of concepts may be encouraged through a series of activities. There we are concerned with the teaching of meaning beyond the primary level. Let us confine ourselves here to those activities that help the kindergarten and/or first-grade teacher to develop the conceptual readiness required by pupils on that level.

The following activities seem especially appropriate:

1. Give the child an opportunity to deal with the concrete object.
2. Label objects in the classroom.
3. Use pictures and art activities to expand the child's concepts.
4. Encourage conversation and storytelling.
5. Use description, riddle, rhyme, and puzzle games.
6. Use audio-visual aids.
7. Use dramatization, marionette and puppet shows, pageants and operettas.
8. Teach the pupil to construct and use picture dictionaries.
9. Use oral and written directions.
10. Teach the skills of classification and categorization.
11. Emphasize thought-initiating experiences.

Let us discuss each of these eleven activities.

EXPERIENCE WITH THE CONCRETE OBJECT

A natural activity in the kindergarten is to have children bring toys and objects to school and tell about them. This "bring-and-tell" activity, besides being language training, is interesting to the children and extends their meanings.

Demonstrations, models, exhibits, and dioramas also serve to expand children's meanings and vocabulary. The child's experiences may be broadened by models of weapons, homes, and vehicles, and by bird

specimens and geological specimens. He may learn to construct a play house, a play town, a toy store, an airplane, or a fire engine. Science activities, such as collecting shells and rocks or caring for an aquarium, develop and clarify children's concepts of the real world that is symbolized by words (p. 47).³⁰ Children may discuss the seasons and the weather. They may care for plants and study about vegetables and flowers.

They learn the meaning of pint, quart, and gallon by handling and seeing such containers. A measuring cup may be used to develop meaning for half, fourth, or third. The height of the door, the weight of a bag of potatoes, or a foot rule are simple referents useful in teaching measurement concepts.

Concepts develop most easily through sense impressions. Visitation, for example, of farms, food markets, factories, trains, museums, circuses, newspaper plants, creameries, planetariums, zoos, fire departments, bakeries, airplanes, post offices, school buildings, libraries, and stores provide experience backgrounds for many words. Preparatory activities should familiarize the pupils with the objects that they will have an opportunity to see. The pupils need to know what to look for. After the trip the pupils need exercises in association of the experience and the symbol. They may draw pictures of what they saw or they may develop an experience chart about their trip.

In developing meanings, the teacher also should make use of the child's sense of touch, taste, smell, and hearing. The kindergarten child likes to handle objects. Nails, bolts, washers, screws, ball bearings, pliers, files, screw drivers, and hammers fascinate him. The teacher may blindfold the child and ask him to identify by touch—fur, bark, screen, soft flannel-like leaves, satin, sandpaper, and thistles.²⁵

The young learner likes to make sounds and to discriminate sounds made in the world about him. He finds the broadening of his meanings through the sense of smell a most delightful activity. He may never have identified a specific smell with paint, varnish, ink, oil, soap, fingernail polish, shoe polish, gas, or ether.

On more advanced levels the child should hear and "see" the meaning of words like stealthily, drowsy, steaming, or smoking.

An interesting game is "My Nose Tells Me." A blindfolded pupil is asked to identify foods or objects by smell. Apples, onions, vinegar, paint, leather, bananas, oranges, or pepper may be used.

In developing meaning for words the teacher usually proceeds from the concrete to the abstract. The word "pear" can refer to an individual pear or to a group of pears. In the latter case it has a class meaning. The child develops this meaning for pear *through experiencing all kinds of pears*. He observes differences in pears, but also notes their basic similarity.

LABELLING

Labelling of objects in the classroom begins in the kindergarten. For example, labels are put on the desks, chairs, doors, windows, and pictures. The child's name is put on his kindergarten rug. Children develop scrapbooks with labelled pictures. In the upper grades teachers find labelling to be a useful way for teaching technical vocabularies. Pupils provide labels for collections of insects, leaves, rocks, shells, woods, and snakes. They label both the materials and the apparatuses used in class.

Signs and directions are additional means for teaching the child to associate meanings with printed symbols. Signs, such as, "Put milk bottles here," "Stop," "Go," and "Grocery Store," are effective teaching devices.

LEARNING TO READ PICTURES

Children frequently are introduced to the meaning of a word through the use of pictures. Children's books commonly have pictures accompanying the reading. The pictures are clues to the story, and the text often merely represents the conversation of one of the persons identified in the picture. Children should be encouraged to observe what is happening in the picture, to figure out what has happened before and what will happen next, and to decide what the characters in the pictures might be saying.²³ The teacher says: "Open your book to page one. Look at the picture. What has happened? What is going to happen? What is Jack saying?"

Picture storybooks offer almost all children the opportunities for experiencing meaning. They both confirm and extend children's experiences. The teacher says: "Look at this picture. This is a camel. Camels live in a desert. They can go seven days without water."

Pictures give clues to the meaning of a story. By relating pictures to one another the child is preparing himself to follow a sequence of thought units in a sentence or a series of sentences in a paragraph (p. 127).¹⁶

Pictures may be used to teach the multiple meanings of words, to develop meanings for prepositions, to understand the meanings of opposites, and to develop an understanding of sequential thought. The following exercises are illustrative:

The meaning of the words *up* and *down*, for example, can be illustrated by a simple drawing of ascending and descending stairs. The child draws a red circle around the boy going up the stairs and a blue circle around the boy coming down the stairs. Art exercises also are effective for illustrating processes and for demonstrating the steps required in making something.

Pictures also may be used to teach word identification and word recognition skills. In the exercise below the pupil reads the sentences and uses the pictures above the line of print as clues to the incomplete words. He then writes the correct letter in the blank.

1. The boy and girl read books.

2. My _og likes _ones.

3. The _ig lives in the _arn.

4. Jack has a _agon, _all, and _orn.

Meaning: Picture Stories *

CONVERSATION AND STORYTELLING

In actively constructing sentences, stories, and experience charts, children enlarge their vocabulary and increase the number of usable concepts.† Through them they may reveal misconceptions or inadequacies in meaning. The teacher uses this opportunity to clarify and to expand children's meanings. Let us suppose, for example, that the word "potato" appears in a sentence. The teacher may ask: "What kind of potatoes have you seen?" "Where are potatoes generally grown?" Children need a lot of experience with words, and letting them speak is one way of helping them to get this experience.

Numerous language activities can be planned for the child. We already have alluded to the "bring and tell" activity. The child also may tell a story about a picture, he may describe his own art, he may tell of his experiences the previous evening or on the way to school, he may select a title for a picture, or he may play word games (p. 50).²⁸ He may be asked to describe the normal activities of an animal, or he may be required to tell the sequence of events in a story that was read to him.

* From Mary E. Platts, Sister Rose Marguerite, and Esther Shumaker, *Spice*, Educational Service, Inc., Benton Harbor, Mich., 1960, p. 12. Reproduced by permission.

† Durrell (p. 220)¹⁰ points out that experience charts are too whimsical in their choice of vocabulary. He recommends that the teacher modify the oral suggestions of children so as to keep the vocabulary within the limits of the child's experience.

DESCRIPTION, RIDDLE, AND RHYME GAMES

In description games one side of the card contains a description and the other contains the correct word. The child hears the description and then is asked to identify what has been described. In another version of this exercise the pupil is given three words from which he selects the one that identifies what has been described.

Riddles are of two kinds: Who am I? and What am I? The following riddles are illustrative:

I'm the king of the beasts.
When I roar they all fear
They hurry to hide
When I'm sneaking near.* 9

When you're asleep, I'm wide awake,
I see the best at night.
The farmer likes me 'round the barn
To catch the mice in sight.* 9

My coat is red, my tail is bushy:
I'm sly and shrewd and cunning.
I trot for miles across the fields
And never tire of running.* 9

I scamper up and down the trees—
Busy all the day.
I gather nuts for winter's food
And put them all away.* 9

I'm a desert beast,
I won't run dry:
I carry a seven-day
water supply.*

I carry my young
in a pouch so furry.
I hop and I jump
When I'm in a hurry.*

Rhymes are useful in developing meaningful listening. Thus:

Johnny jumped over the wall
Only to have a terrible
(fall)

AUDIO-VISUAL AIDS

We have already spoken of pictures and their usefulness in teaching meaning. Slides, filmstrips, television, lantern slides, radio, and disk and tape recordings bring into the classroom numerous experiences that might never be had first hand. Certain words, for example, satellite, rocket, pyramid, buffalo, racoon, porcupine, bellows, caboose, andirons, bronco, cactus, coyote, catacomb, penguin, chariot, cathedral, and knight, become real only when illustrated visually. In the upper elementary grades, charts, maps, diagrams, and graphs are especially useful for teaching relationships. The sizes of animals—"How tall is a cow?", "Is a cow twice as tall as a horse?"—can be illustrated through the use of comparative graphs.

* *Dot-to-Dot Zoo* (Akron, Ohio: The Saalfeld Publishing Company). Reprinted by permission.

Film readers appear to have special values. Not only can the child see and hear while using the film, but he can then read the same words and content in a correlated reader. Some representative sets of film-readers available are published by D. C. Heath and Harper and Row. Under the series title, *It's Fun to Find Out*, D. C. Heath provides one set for the second grade and one for the third grade. Harper and Row provides a series of readers that correlates with the Britannica film series entitled, *Children of Many Lands*.*

Educational Developmental Laboratories¹⁴ recently issued a series of readiness and pre-primer film materials that should prove beneficial in the teaching of kindergarten and first-grade children. The readiness set is designed to develop the ability to recognize gross forms, to expand common experiences, to teach categorization, to develop visual and auditory discrimination, and to quicken the child's ability to see relationships. The preprimer set is designed to develop recognition of letters, to teach discrimination of capital and lower case letters, to teach initial sounds, to differentiate word forms, to develop the child's ability to associate pictures with print, and to develop ability in basic comprehension.

DRAMATIZATION, MARIONETTE AND PUPPET SHOWS, PAGEANTS, AND OPERETTAS

Acting out the activity frequently is the best way to teach the meaning of words like *hop* and *skip*. It is equally effective in teaching prepositions such as *into*, *upon*, *below*, *above*, *behind*, *through*, *around*, or *before*; in teaching such action words as *snail-like*, *trippingly*, *hesitantly*, *haltingly*, *nervously*, *clumsily*, *quickly*, *safely*, *quietly*; and in teaching feeling words such as *mourning*, *apathy*, *elation*, *anger*, *disgust*, and *fear*. Sometimes a dramatic bit is useful in teaching the meaning of abstract terms such as *love*, *courage*, *cooperation*, and *appreciation*.

Drama also may be used to relive trips, to learn safety rules and social manners, and to learn to interpret music.

CONSTRUCTING AND USING PICTURE DICTIONARIES

Children early construct their own dictionaries. Each new word they meet is included in the dictionary and is accompanied by a picture. The dictionary starts out as twenty-six pages, each page having the same capital and lower case letter. When the child has mastered manuscript writing, a description may accompany each word. Action words are ac-

* For information on other sets of film readers see Chapter 14 in the section, "Audio-Visual Materials."

accompanied by action pictures. Words like *here*, *there*, *wherefore*, *therefore*, and *why* must be explained by using them in sentences.

There also are many commercialized picture dictionaries on the market today. These are especially helpful in developing meanings for a word and in developing alphabetizing skills. Some of the common picture dictionaries are:

Clemens, Elizabeth, *Pixie Dictionary*. New York: Holt, Rinehart, and Winston, 1953.

Courtis, Stuart, and Watters, Garnette, *Illustrated Golden Dictionary*. New York: Golden Press Educational Division, 1951.

MacBean, Dilla W., *Picture Book Dictionary*. Chicago: Children's Press, Inc., 1962.

O'Donnell, Mabel, and Townes, Willmina, *Words I Like to Read and Write*. New York: Harper and Row, Publishers, 1954.

Parke, Margaret B., *Young Reader's Color-Picture Dictionary for Reading, Writing, and Spelling*. New York: Grosset and Dunlap, 1958.

Reed, Mary and Osswald, Edith, *My First Golden Dictionary*. New York: Golden Press Educational Division.

USE OF ORAL AND WRITTEN DIRECTIONS

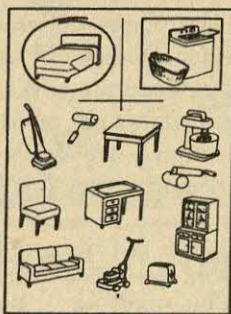
As has already been mentioned, teachers help to develop word meanings by posting directions on the bulletin board or on the blackboard. They also may ask children to carry out certain actions. "Get your colors, Lori," "Pass the napkins, Randy," are examples of spoken directions.

Two games, the "Do This" and the "Yes and No" game are suitable activities. Each game requires a set of cards. One set gives directions and the other asks questions. The child selects a card, reads it aloud, and carries out the desired directions or answers the question. "Do This" cards contain statements like the following: "Stand up and then sit down," "Stand up and point to the left," "Point to the sky," "Clap your hands," or "Give the number that follows five." "Yes and No" cards contain statements like the following: "Can a dog fly?," "Can birds sing?," "Are cats bigger than lambs?," or "Are there boys in our class?" If the responses to the directions and questions show that the child does not possess the concept involved, the card is put on the bottom of the pack. If the response is adequate, the child keeps the card. The child with the most cards wins the game.

FITTING OBJECTS AND WORDS INTO CATEGORIES

In reading, the child is constantly required to think of an individual object as a member of a class. He has to think in categories. Initially the

exercises used to teach this skill are pictorial in nature. The following are examples of such exercises:



Classifying Objects to Wear. Classifying Furniture and Machines.† Classifying Birds and Insects.†*

Another activity requires the more advanced learner to place words into appropriate categories. In one column is a list of words; opposite the list are certain categories under which the words may be appropriately grouped.

Words		Categories	
Turkey	Pumpkin pie	Christmas	Thanksgiving
Mistletoe	Tree		
Bell	Cranberry sauce		
Santa Claus			

Other headings for the category columns, for example, may be: things that float, things that are mineral, things that are vegetable, things to eat, things to make, things that move, things to wear, things that are found in the country, things that are found in the city, things that grow under the ground, or things that fly, things that walk, things that grow, things that run, things that crawl, or things that have wheels.

The child may be asked to sort articles into the following three categories: things found in a grocery store, things found in a hardware store, and things found in a clothing store. He may group objects according to color. Words that might be appropriately used here are: apple, avocado, beet, bread, butter, carrot, cherry, chocolate, corn, egg, milk, peach, pear, pea, orange, potato, grass, snow, squirrel, strawberry, tomato, and watermelon.

Generally three classifications, such as things to eat, things to wear, and things that run, are adequate. There is almost no limit to the number of categories that one can identify.

* From "Independent Activities," Level 1, *Reading Readiness Catalog*, Continental Press, Inc., Elizabethtown, Pa. Reproduced by permission.

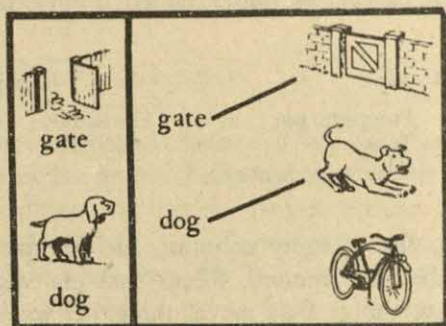
† From "Thinking Skills," Level 1, *Reading Readiness Catalog*, Continental Press, Inc., Elizabethtown, Pa. Reproduced by permission.

ADDITIONAL THOUGHT-INITIATING ACTIVITIES

Numerous activities not classifiable under the broad categories suggested above promote the development of concepts necessary for beginning reading. One of these concepts is the meaning of symbols. The child must learn that the word stands for an idea or concept and thus for the real thing. Without this knowledge the child will always be merely a wordcaller. The exercise below teaches this skill.

In the small box on the left find the gate and the dog. Under the picture of the gate is the word gate. This word stands for gate. And under the picture of the dog is the word dog. It stands for dog. Look closely at the words.

In the big box on the right are the same two words and three pictures. Look at the top word. What does it stand for? Draw a line to the picture of the object that it stands for. Now look at the bottom word. What does it stand for? Draw a line from it to the correct picture.*



Other sample exercises from the Harrison-Stroud Teacher's Manual that are used in the test are found on p. 141. †

Another basic skill that the pupil needs to develop is the use of the context to identify the word. The teacher can and should test the pupil's ability in this skill even before he begins to read. An exercise similar to the following is helpful [Illustration is on p. 142]:

Look at box one. You see a streetcar, a chicken, and a fish. Now listen: "Paul almost fell out of the boat when he was trying to catch something." One of the pictures shows what Paul was trying to catch. Draw a line under it.†

* M. Lucille Harrison and James B. Stroud, *Harrison-Stroud Reading Readiness Profiles, Teacher's Manual*, p. 12. (Boston: Houghton Mifflin Company, 1956). Reprinted by permission.

† *Ibid.*

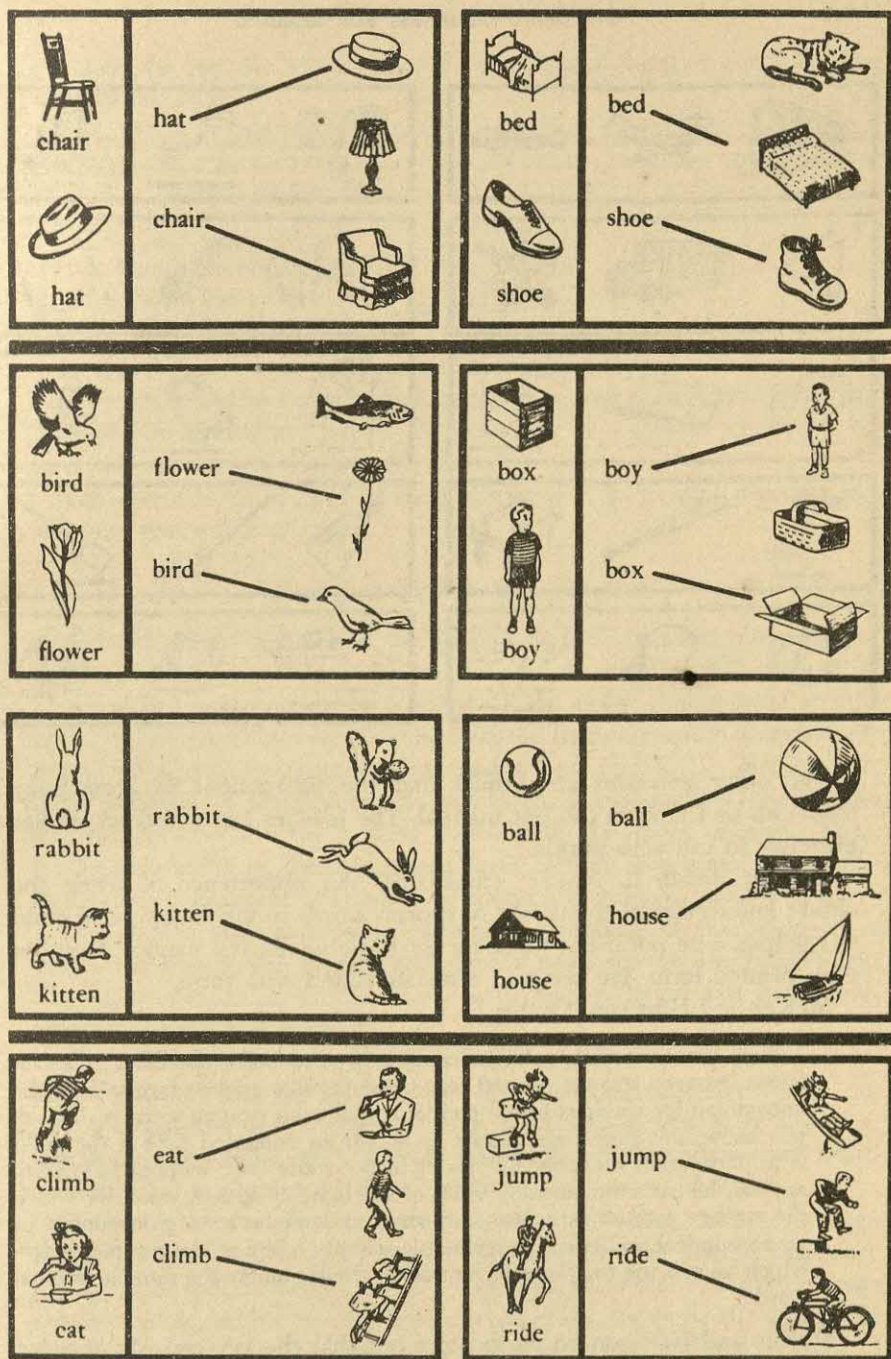
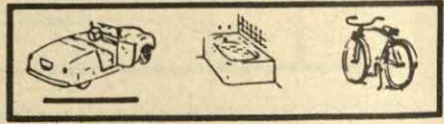
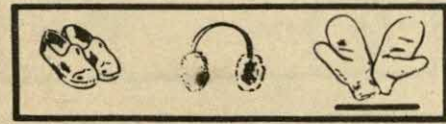
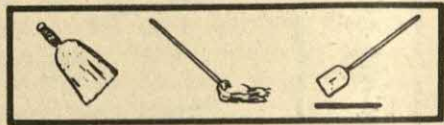
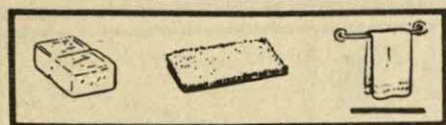


Figure 7-2.



The other exercises are similar and the instructions to accompany them can be found in the test manual. The teacher can construct similar exercises to use with pupils.

*Getting Ready to Read*²⁴ emphasizes the importance of using the child's knowledge of thousands of spoken words in introducing the child to reading. The pupil has meaning for these words but cannot decipher their printed form. He needs to associate sound with form.

McKee and Harrison²⁴ note:

How does the child who is learning to read make the correct associations between strange printed forms and familiar spoken forms? It is not uncommon for teachers to tell children what each strange word is. But, as you know, this procedure cannot go on for an unlimited time if the child is to become an independent reader in the sense that, without help from anyone, he can automatically think of the familiar spoken word for which the strange printed form stands. Sooner or later he must gain control of an economical and effective technique—simply a key to the printed code—which he can use to stimulate himself to think quickly the familiar spoken word.*

McKee and Harrison go on to point out that the key consists of using together the context and the beginning consonant sound of the word to

* Paul McKee and M. Lucile Harrison, *Getting Ready to Read* (Boston: Houghton Mifflin Company, 1962). Reprinted by permission.

identify the specific word required. An exercise such as the following teaches this skill.

The teacher reads aloud a series of sentences omitting the final word. The pupil may be told that the words should begin with a specific sound such as *b*. Sample sentences are:

1. I went swimming in a (brook)
2. In the birdhouse I saw a (bird)
3. I use a bat to hit a (ball)
4. I can drive a (bike) *

In these exercises the pupil uses the first consonant of the word to help him to arrive at the correct word. Later in actual reading this skill will be useful in identifying words. He will think of a spoken word that fits both the context and the initial letter.

The exercises on pp. 144-45 are illustrative of additional ways for developing conceptual thinking.

Training in Auditory Discrimination

Auditory discrimination is the ability to discriminate between the sounds or phonemes of a language. It is evident that this skill is essential to successful achievement in reading. If the child cannot *hear* sounds correctly, he normally cannot learn to *speak* them correctly. A child cannot pronounce distinctions that he cannot hear (p. 302).⁸ Furthermore, if he confuses or distorts sounds in speech, it frequently is impossible for him to associate the correct sound with the visual symbol. Thus, inadequate auditory discrimination leads to improper speech and ultimately to an incorrect association of sound and printed symbol.

The learner must discriminate the phonetic elements that make up a word. He must make appropriate associations between the spoken and the written word. He gradually needs to realize that words that sound alike frequently look alike.

The ability to make auditory discriminations is greatly lessened by high frequency hearing losses. Berry and Eisenson (p. 448)¹ point out that the high frequency sounds, *f*, *v*, *s*, *z*, *sh*, *zh*, *th*, *t*, *d*, *p*, *b*, *k*, and *g*, determine the intelligibility of what is said. If these sounds are not heard correctly, interpretation of what is said becomes more difficult.

Unfortunately, many other children who have not suffered a high frequency hearing loss are unable to discriminate the sounds necessary for accurate speech. Cole (p. 282),⁵ for example, notes that the average six-year-old is unable to distinguish consistently between the sounds of *g* and *k*, *m* and *n*, and *p* and *b*. This makes it more difficult to learn to read. Children must learn that words consist of sounds, that the same

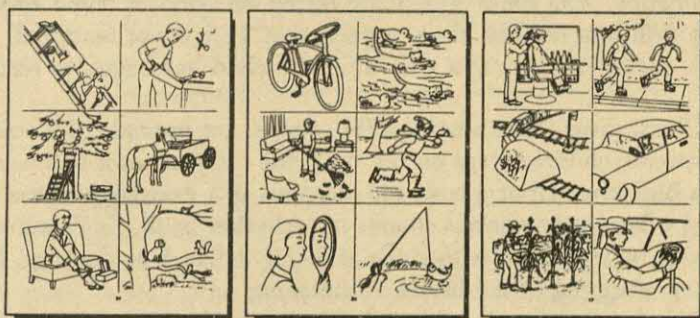
* Consult *Getting Ready to Read* for numerous similar exercises.



(4) Which Happens First?



(5) *Arrange the Ideas in Order*



(6) Detect the Absurdities

The illustrations on this page are from *Reading Readiness Catalog*, Continental Press, Inc., Elizabethtown, Pa. Reproduced by permission.

sound may occur in more than one word, and that one word generally has different sounds than another word (p. 152).²²

Other writers have identified additional advantages of successful auditory and visual discrimination. Cordts,⁷ for example, notes that unless the child learns to differentiate between sounds in words, the foundation for phonics is inadequate. And Durrell and Murphy¹² report that training in auditory discrimination increases general reading achievement. They note that the child who learns to read easily is usually one who notices the distinct sounds in spoken words.

The facts³² concerning auditory discrimination are these:

1. Children have varying degrees of ability in auditory discrimination.
2. The maturation of the auditory discriminatory skill is gradual and rarely is fully developed before the age of eight.
3. Poor auditory discrimination is related positively to inaccuracies in articulation and pronunciation and/or to poor achievement in reading.
4. The relationship between auditory discrimination and intelligence is essentially negative.
5. As auditory discrimination matures and is developed through instruction, the learner becomes capable of producing more and more of the sounds of the language. The child gradually learns to fashion his own speech after the speech that he hears.

The following techniques may prove helpful in teaching auditory discrimination. The child should be tested on each of these exercises. But we drill him only on those aspects that he has not mastered. Some of these exercises are proper only after the child has begun to read.

1. Check gross discriminations for sounds: for example, the voices of specific children; taps on the desk, the radiator, or a bell; songs of a bird, the call of a cow, the chirping of a grasshopper, the neigh of a horse; the various sounds of a rhythm band. Each instrument may be associated with a physical activity, such as skipping, laughing, clapping of the hands, or tiptoeing.
2. List the names of children beginning with the same sound. Ask children to give other words *beginning* with the same sound.
3. Have children note similarities or differences in the initial consonants of pairs of words: for example, the similarities in *can* and *cat* and the differences in *cat* and *bat*.

Picture exercises are especially beneficial here. The child is shown three pictures, the first of which may be that of a bell. Of the other two pictures, the name of only one begins with *b*. The teacher asks the pupil to pick out the one that begins with the same sound as *bell* and to draw a line to it.

4. Provide the pupils with three pictures and ask them to pick out the two pictures whose names begin with the same sound. The child should be introduced to the sounds in the following order: *m, t, b, h, p, n, c, d, g, j, w, f, l, r, and s*. Figure 7-3³ illustrates the technique.

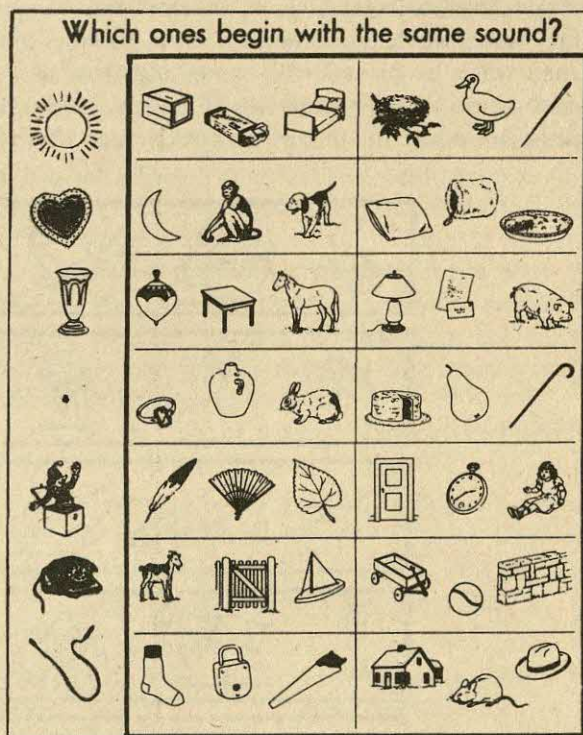


Figure 7-3.*

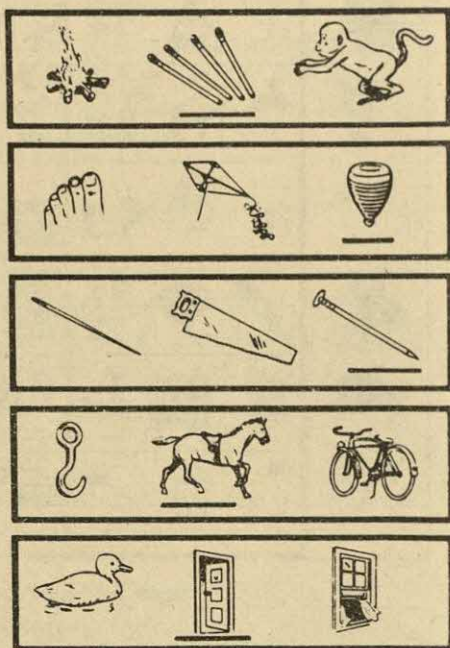
The objects in Figure 7-3, reading across the rows of boxes are: box, gum, bed; nest, duck, needle; moon, monkey, dog; pillow, muff, pie; top, table, horse; lamp, letter, pig; ring, jug, rabbit; cake, pear, cane; feather, fan, leaf; door, watch, doll; goat, gate, boat; wagon, ball, wall; sock, lock, saw; house, mouse, hat. In the margin are: sun, valentine, vase; jack-in-the-box, telephone, jump rope. The child is asked to discover the two pictures whose names begin with the same sound.

5. After demonstrating the *b* sound, for example, ask pupils to provide words with *b* that answer the following questions:
- What do you use to hit a ball?

* *Bulletin-Board Lessons for First Graders on Important Phonetic Skills*. Copyright © 1958 by Scott, Foresman and Company, Chicago. Reproduced by permission.

- b. In what do you sleep?
 c. What word do you use when you want to say that something is large?

This exercise teaches the child to use both contextual and auditory clues to identify the correct word. A similar exercise requires the pupil to underline the picture that meets both contextual and auditory requirements. Look at the first box of pictures. You see a fire, matches, and a monkey. Now listen! "Mel's fingers got burned when he played with something that he should not have played with. What burned Mel's fingers begins like his name. Draw a line under the picture of what burned Mel's fingers. . . ." °



6. After demonstrating a given sound, for example, *f*, present the pupils with a mimeographed page of pictures. Ask them to put a line through the objects whose names do not begin with an *f*. The page may contain pictures of a hat, fox, foot, box, cat, hammer, finger, fan, and file.

° M. Lucile Harrison and James B. Stroud, *Harrison-Stroud Reading Readiness Profiles, Teacher's Manual*, p. 20. (Boston: Houghton Mifflin Company, 1956). Reprinted by permission.

7. Explain the meaning of rhyme and illustrate it by providing words that actually rhyme, such as am, ham, jam, Pam, ram or at, hat, mat, Pat, cat, rat, fat.
8. Read simple verses to children and ask them to note the similar-sounding words at the end of each line. Ask them to identify the words that rhyme with a given word, as for example, "stick." Common rhymes are: "Hickory, Dickory, Dock," "Jack Be Nimble," and "Wee Willie Winkie."
9. Ask children to provide rhymes for simple words such as cat, bet, lit, lot, but. The game "Quiz Panel" * is quite adaptable to this task. The teacher selects a panel of four pupils who sit in the front of the room. He pronounces a word and individual members of the panel must provide a rhyming word. When the panel member misses, he is replaced by another member of the class. A variant form of this exercise asks the child to do picture reading. The child is shown three pictures, the first of which is a bat. Of the other two pictures, only one rhymes with bat. The teacher asks him to pick out the one that rhymes with bat.
10. Suggest three words, two of which rhyme. Ask children to pick out the word that does not rhyme with the other two words.

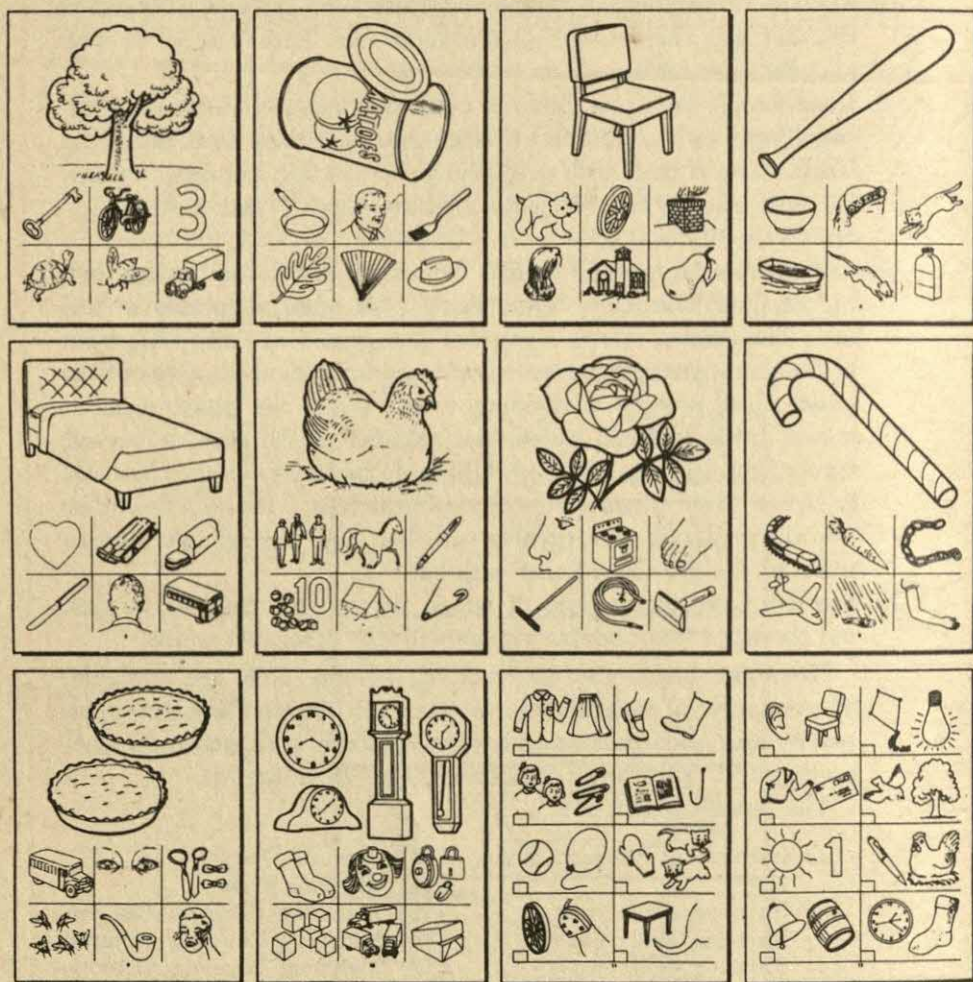
Numerous techniques for teaching rhyming skills are available. The commercial materials shown on pp. 150-51 are illustrative. The twenty-four cuts teach various rhyming skills and each represents an 8½ x 11" page in a booklet entitled "Rhyming." †

The lessons taught are:

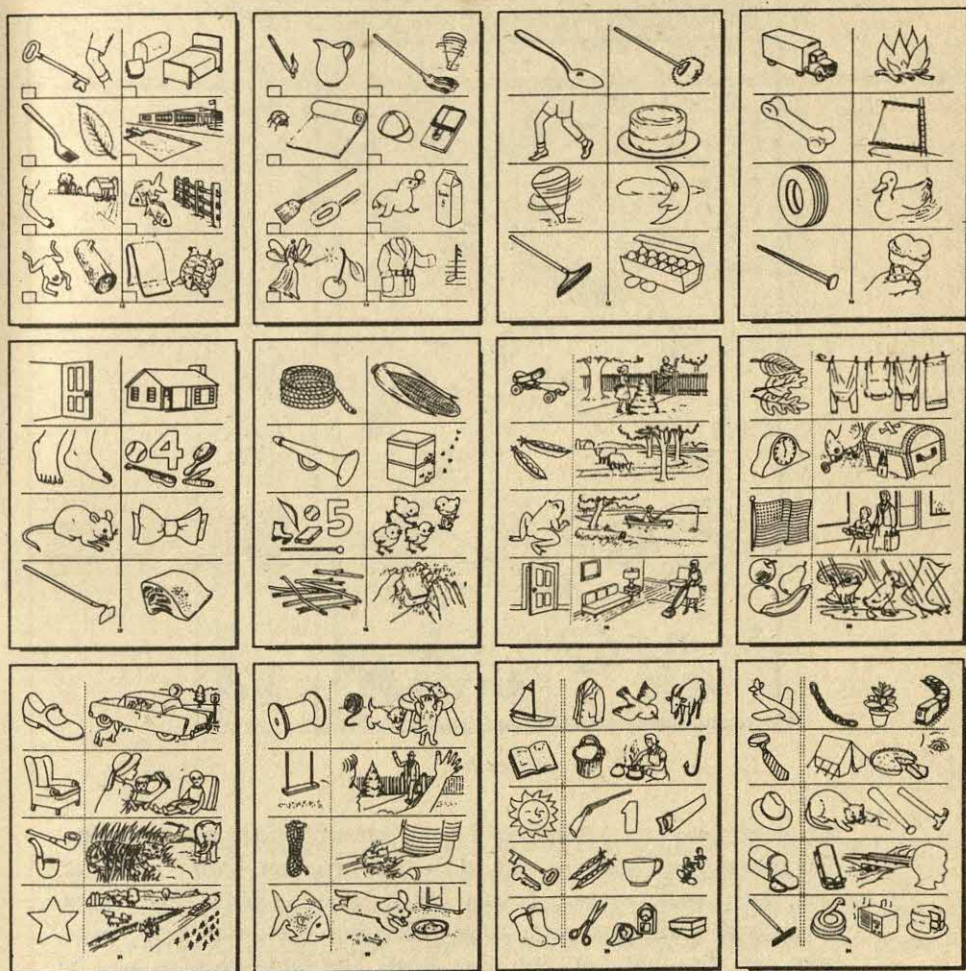
- | | |
|--------------------------------------|--------------------------------|
| (1) Introducing Rhyming Skill (tree) | (13) Rhyming Pairs |
| (2) Rhyming Skill (can) | (14) Rhyming Pairs |
| (3) Rhyming Skill (chair) | (15) Matching Rhyming Pictures |
| (4) Rhyming Skill (bat) | (16) Matching Rhyming Pictures |
| (5) Rhyming Skill (bed) | (17) Matching Rhyming Pictures |
| (6) Rhyming Skill (hen) | (18) Matching Rhyming Pictures |
| (7) Rhyming Skill (rose) | (19) Finding Rhyming Detail |
| (8) Rhyming Skill (cane) | (20) Finding Rhyming Detail |
| (9) Rhyming Skill (pies) | (21) Finding Rhyming Detail |
| (10) Rhyming Skill (clocks) | (22) Finding Rhyming Detail |
| (11) Identifying Rhyming Pairs | (23) Rhyming (Test) |
| (12) Rhyming Pairs | (24) Rhyming (Test) |

* Platts, Mary E., Sister Rose Marguerite, and Esther Shumaker. *Spice*, Educational Service, Inc., p. 143.

† "Rhyming," *Reading Readiness Catalog*, Continental Press, Inc. Reprinted by permission.



11. Ask children to note similarities and differences in final consonants of pairs of words.
12. Say a sentence in which the same sound occurs more than once in the initial or final position and ask the pupil to identify this sound: for example, "Pam has a pet" or "Pam mops the mat."
13. Have children listen for and give words beginning or ending with the same consonant blend or speech consonant. The order should be: beginning consonant blend, final consonant blend, initial speech consonant, and final speech consonant.
14. Have children listen for and give monosyllabic words containing the same short vowel.



15. Have children listen for and give monosyllabic words containing the same long vowel.
16. Have children listen for and give words of two or more syllables.
17. Have children read a printed word and then from three pictures have them select those two whose names rhyme with the printed word.³ Figure 7-4 illustrates this exercise. The objects in Figure 7-4 are: cuff, muff, ball; leaf, clown, crown; tree, cup, bee; moon, coat, goat; star, jar, bell; pan, pipe, fan; bed, sled, bib; sun, saw, gun; hook, boat, book; snake, cake, nest.
18. Have children associate consonant sounds with the appropriate visual symbol. In Figure 7-5³ the child identifies each picture, says its name, and then locates that picture whose name begins with

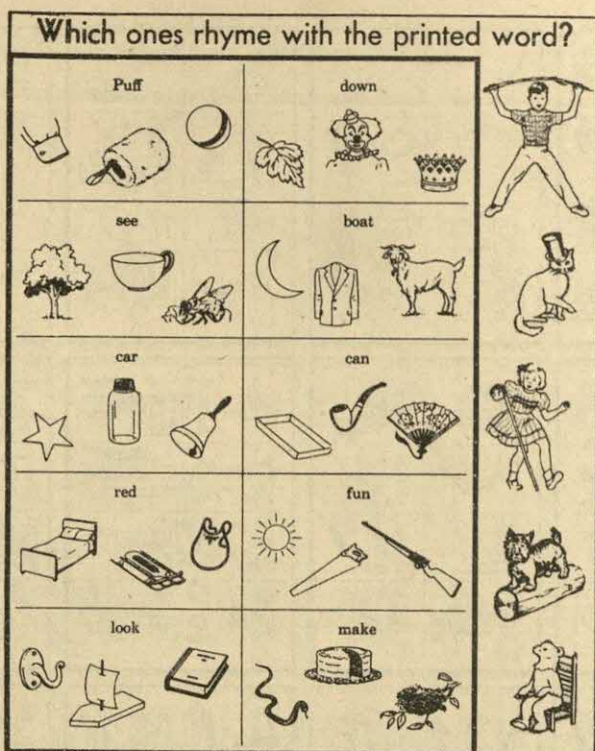


Figure 7-4.*

the same sound as symbolized by the letter at the top of each box. The pictures in Figure 7-5 are: dish, fish; hen, pen; barn, yarn; nest, vest; lock, sock; mouse, house; kitten, mitten; goat, coat; tacks, jacks; ball, wall; gun, sun; corn, horn; fan, pan; top, mop; cake, rake; tire, fire; bat, hat; and coat, boat. The same exercise may be used with final consonants, beginning and ending consonant blends and speech consonants, and with short and long vowels.

Training in Visual Discrimination

Surely one of the most important skills needed for reading is the ability to visually analyze and synthesize printed words. The child must be able to note similarities and differences in the form of objects, pictures, geometric figures, and words. Generally children have learned to discriminate between gross figures and objects. They see the differences between a cat and a dog and between circles, triangles, and squares. They also have learned something about words. Long before they come to school they have identified signs such as "Phillips 66," "Stop,"

* *Bulletin-Board Lessons for First Graders on Important Phonetic Skills*, Copyright © 1958 by Scott, Foresman and Company, Chicago. Reproduced by permission.

Can you match letters and beginning sounds?

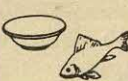


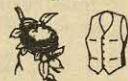
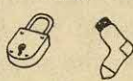



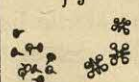

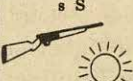





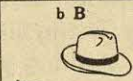

B C D F G H J K L M N P R S T W Y	d D 	p P 	y Y 
	n N 	l L 	m M 
	k K 	g G 	j J 
	w W 	s S 	h H 
	f F 	t T 	r R 
	t T 	b B 	c C 

Figure 7-5.*

"Wichita," or "Kansas." They have noted that some words are long and others short, that some have ascending letters and others have descending letters, and that some words look alike and that others look different.

Unfortunately, it is not always possible to know whether the pupil has used the correct process in identifying a word. Unless he has identified the word through some peculiarity of the word itself, he may not have learned or at least has learned incorrectly. Children frequently learn to identify a word by a simple association process. Perhaps the word "Stop" is "Stop" only when it is seen at the end of a block and appears on an octagonal-shaped figure. The word "Bob" is "Bob" only when it appears on that card with the dirt splotch in the bottom left-hand corner.

Thus, the question "What should the teacher emphasize in visual discrimination training?" A series of studies at Boston University¹¹ suggests that most children are able to match one capital letter with another capital letter and one lower case letter with another. The matching of nonword forms and pictures seems to have little benefit on letter or word

* *Bulletin-Board Lessons for First Graders on Important Phonetic Skills*, Copyright © 1958 by Scott, Foresman and Company, Chicago. Reproduced by permission.

perception. The learning in the former does not seem to transfer to performance on the latter.

Reading requires the ability to distinguish each word from every other word. The pupil must be relatively more skilled in noting the differences among words than in noting the similarities.

One cannot infer that all matching is useless. Some children may not have learned this simple step. The teacher uses a matching exercise as a diagnostic device. When the pupil has not developed adequately in this regard he should stress matching of objects, signs, and words. He starts teaching at the level the child has attained.

Certain other principles should guide the teacher in his teaching of visual discrimination. He must be careful not to overdrill on any one skill. If the pupil can do a specific exercise with ease, it is imperative that with him he work on a higher-level skill. There perhaps is no quicker way to destroy interest in learning to read than to force the pupil to engage in a readiness activity that he already has mastered.

The teacher also needs to develop some sequence in teaching the letters. He must begin with simple forms and proceed to more difficult ones. Some letters are readily distinguishable, for example, *x* and *b*. Others are not so readily distinguished. Children have a tendency to confuse *b* and *d*, *p* and *b*, *p* and *d*, *p* and *q*, *u* and *n*, *m* and *w*, *o* and *e*, *o* and *c*, *e* and *c*, and *g* and *b*. These letters profitably might be introduced at different times to minimize interference.

Finally, in visual discrimination exercises, the emphasis is not on reading. We do not specifically teach the pupil to associate a printed word with a spoken word or with an object or experience. The pupil must note differences in words. He should be able to verbalize the differences in words. He should be able to verbalize the difference in the initial letter, the final letter, or in the general form of the words. We expect to teach him "what to look for," so he may identify words as distinct units of language.

A desirable sequence of exercises in visual discrimination has not been identified. In many instances it has not been possible to develop exercises that are distinct from tests of intelligence. The following exercises are merely suggestive of some activities that may be used to develop discrimination between words, syllables, and letters:

1. Check on the pupil's discrimination of gross form; pictures, objects, and geometric figures; differences in color; or ability to fit the pieces of a puzzle. The child may have to learn the blues or the reds in sweaters, dresses, and trousers worn by his classmates. He may learn to distinguish various shades of green in nature. And he may learn to mix colors so as to produce various shades.²⁵

Children should learn to trace a design, to visualize spatial relationships, and to think and reason spatially; they must develop eye-hand coordination and visual motor skills. It is believed by many that reversals are errors in visual and spatial location.

A small book, "Visual-Motor Skills,"* suggests twenty-four activities for teaching visual-motor and spatial skills. The twenty-four sets of activities suggested are (see illustrations, pp. 158-59):

- (1) Tracing a Design
 - (2) Tracing a Design
 - (3) Tracing a Design
 - (4) Tracing a Design
 - (5) Completing a Design-Aided
 - (6) Completing a Design-Aided
 - (7) Completing a Design-Aided
 - (8) Completing a Design-Aided
 - (9) Completing a Design-Aided
 - (10) Completing a Design-Aided
 - (11) Completing a Design-Aided
 - (12) Completing a Design-Aided
 - (13) Spatial Relationships
 - (14) Spatial Relationships
 - (15) Spatial Relationships
 - (16) Spatial Relationships
 - (17) Designs—Simple Repetition
 - (18) Designs—Simple Repetition
 - (19) Sequence—Reasoning, Visualization
 - (20) Sequence—Reasoning, Visualization
 - (21) Copying Patterns—Simple Repetition
 - (22) Copying Patterns—Simple Repetition
 - (23) Sequential Designs—Reasoning
 - (24) Sequential Designs—Reasoning
2. Present each pupil with a copy of his name. Let him note the differences and similarities between his name and that of some of his classmates.

An exercise of this type teaches gross discrimination in word forms. Exercises similar to the following teach the same skill.

Encircle the Word That Is Different

cat—cry—cat boy—bed—bed car—her—car
day—yes—yes fly—bee—fly and—why—and

Put a Line Under the Two Words That Are Alike

yes—yes	see—fell	mat—met
cat—bat	saw—saw	rat—bat
on—no	fan—pan	in—on

* "Visual Motor Skills," *Reading Readiness Catalog*, Continental Press Inc. Reprinted by permission.

Draw a line under the word in the small box on the left. Now draw a line under the word in the long box on the right that looks like the word in the little box.*

<u>do</u>	<u>do</u> go of so	<u>here</u>	there <u>here</u> her hear
<u>of</u>	for off <u>of</u> on	<u>horse</u>	<u>horse</u> home house shore
<u>how</u>	<u>how</u> now who hot	<u>made</u>	make <u>made</u> male wade
<u>man</u>	pan <u>man</u> many men	<u>stop</u>	spot pots tops <u>stop</u>
<u>soon</u>	moon <u>soon</u> some noon	<u>play</u>	pay lay plan <u>play</u>
<u>will</u>	well with <u>will</u> till	<u>where</u>	when there <u>where</u> here
<u>run</u>	ran rub sun <u>run</u>	<u>says</u>	said rays boys <u>says</u>
<u>big</u>	pig dog <u>big</u> boy	<u>looked</u>	looking locked <u>looked</u>

3. Provide each pupil with a mimeographed page of letters and/or monosyllabic words that are arranged in columns by pairs. Let him encircle those pairs that are different.

An exercise of this type teaches gross discrimination in letters. The following exercises call for the same type of skill.

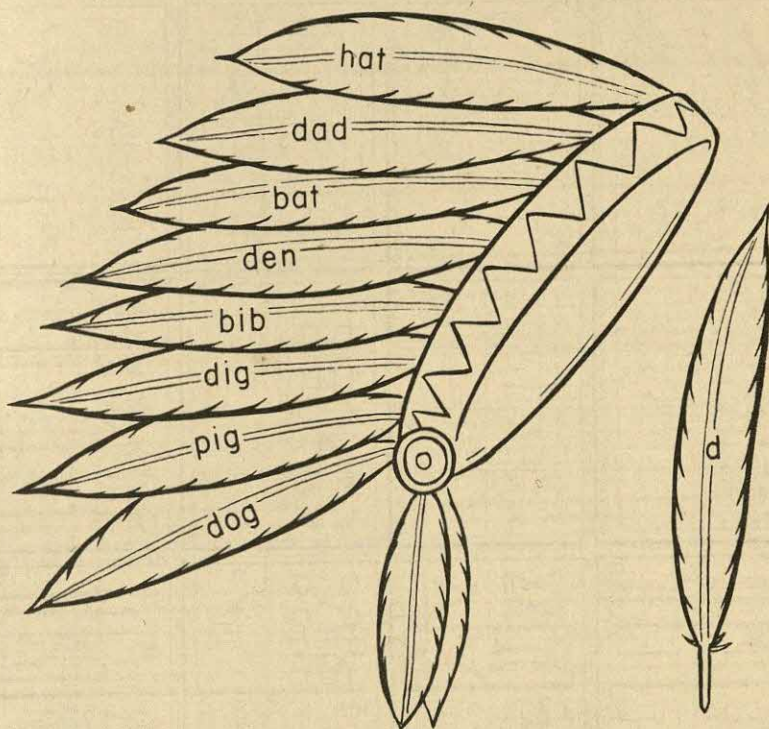
Encircle the Letter That Is Different

s s k
h y h
b b d

m l m
n m n
r r z

p p b
s s a
n n v

* M. Lucile Harrison and James B. Stroud, *Harrison-Stroud Reading Readiness Profiles, Teacher's Manual*, p. 14. (Boston: Houghton Mifflin Company 1956). Reprinted by permission.



Color the Feathers in the Indian Headdress on Which There Is a Word That Begins with the Same Letter as the Letter in the Feather on the Right.

Draw a Line Between the Two Letters That Are Alike

b a
c b

k t
t l

v t
h t

s s
a z

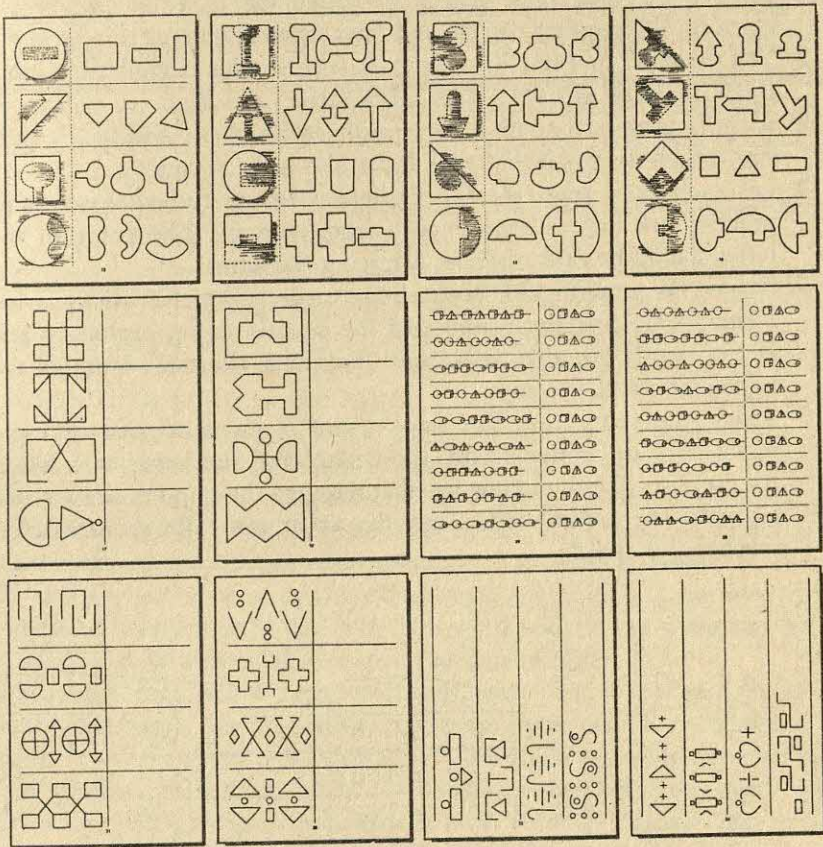
r h
b b

Draw a Line from Each Word to the Letter That Is the Same as the Letter That Begins the Word

bat — b
hat p
map t
net h
pan m
top n

bib t
hen h
mop n
nut h
pet m
tub b

4. Present three words and let the pupil select the word that is repeated more than once in the sequence: for example, can, pan, can. By increasing the number of words to five the task is made more difficult.



We can only surmise what the reason for this finding might be, but a child who has associated a name with a letter already has learned basic reading skills. He has associated some meaning with a printed symbol and he has learned to discriminate it visually from other forms.

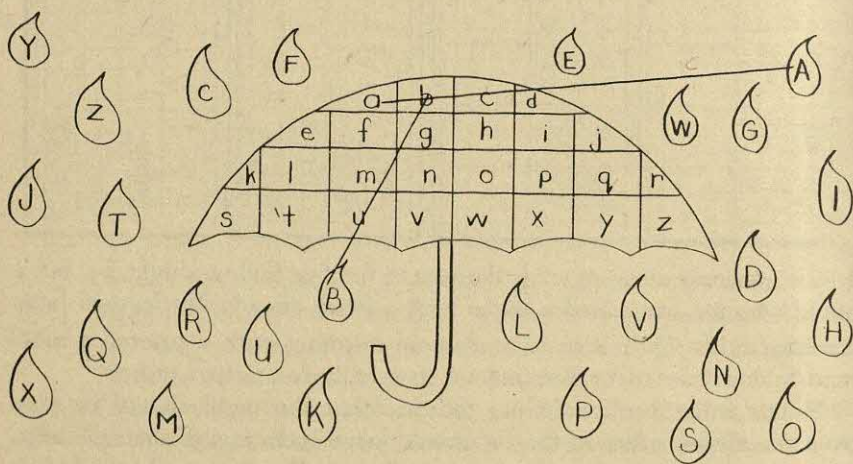
Whereas the studies do not indicate that the pupil should be able to name all the letters or that he should know them in alphabetical order, this knowledge is not without value. Eventually, the pupil will find it necessary to file his words, to locate them, and to use the picture dictionary.

The names of both capital and small letters should be taught first, but from the start the pupil should realize that each letter both has a name and represents a sound. Some children will have learned to identify letters and to name them by the time they enter kindergarten. Others will have to be taught in school.

The following techniques may prove helpful in teaching the names and sounds of the letters:

1. Let each child become familiar with the specific letters used in his name. Point out the similarities and differences among the letters

- and tell him that these marks are called letters. Some pupils will learn to differentiate capital and lower case letters at this level.
2. Tell the child that the little marks or letters in his name have names. Begin teaching of names with a few letters at a time.
 3. Identify each letter with a key word: *b* with bee; *c* with cat; *s* with sun. Teach the pupil that each letter also has a sound.
 4. Let each child trace the specific letters being studied. After some practice ask him to reproduce it from memory. The name of the letter should be said while he is tracing the letter.
 5. Expose the pupil to ABC books, letter cards, and picture dictionaries. Demonstrate that the reason that the sounds at the beginning and end of words are alike is because they have the same letter at the beginning or at the end.
 6. Teach the pupil that the same name is given to two different manuscript or printed forms, the capital and the lower case letter. An exercise, like the following, that requires the pupil to draw a line between the capital letter and the appropriate lower case letter teaches this skill.*



7. Let the pupil arrange the letter cards in alphabetical order, beginning with a few letters at a time.
8. Ask the pupil to locate or arrange words in an alphabetical list.

Training in Left-to-Right Progression

Reading is a left-to-right activity. This is a new concept for young children. They have not been taught to observe directions in their everyday

* Mary E. Platts, Sister Rose Marguerite, and Esther Shumaker, *Spice*. © 1960 by Educational Service, Inc., p. 97. Reproduced by permission.

perceptions. A dog looks like a dog whether the eye movement is from left to right or from right to left. Unfortunately, in reading a word this is not so. The letters, s-a-w, read from left to right say *saw*, but read from right to left say *was*. Thus, one of the first requirements in learning to read is the learning of new habits of perception. The child must perceive from left to right.

The term commonly used to indicate that the child is making the wrong directional attack on words is reversing.

There are two major points of view as to the origin of reversals. One, represented by Orton,²⁸ suggests that reversals result from lack of cerebral dominance and are prime factors in reading disability. Another point of view suggests that reversals are a universal phenomenon and do not necessarily cause poor reading. Spache³¹ suggests that they indicate an unfamiliarity with the symbols that the child is trying to learn. Studies also indicate that reversals may be caused by lack of maturation, visual defects, the habit of perceiving objects from right to left, overemphasizing the final sounds of words by concentrating on word families, and the exclusive use of the configuration method. If a word is taught to the child as a Gestalt or as a total configuration, the child has no need to differentiate between right and left. The word will be the same and he can "read" it if he remembers its sound and meaning.¹⁴

During the early school years reversals have been considered to be normal phenomena. Unfortunately, this assumption may have hindered progress in working with the difficulties. Reversals certainly become a serious problem in reading when they continue beyond the second or third grade. After those years children who reverse generally do not make normal progress in reading.

Reversals are of various kinds. Children may reverse certain letters, such as *b* for *d* or *p* for *q*. They may read an entire word backward, such as "was" for "saw." Or they may alter the position of certain letters in words, such as "aminal" for "animal."

The elimination of reversals in reading is not easy. No one method has proved completely effective. In the following exercises we have attempted to suggest some that are suitable both for prereaders and for children at higher levels.

1. Teach children the meaning of left and right by showing them the difference between their right and their left hand or by playing the game "Simon Says." Here the child receives an oral direction sometimes with and sometimes without the words, "Simon Says." When the direction is not preceded by these words and the child carries out the direction, the child is out of the game. The teacher's directions should emphasize distinctions between right and left as: "Put your right foot forward." "Raise your left hand."

2. Ask the child to draw an arrow pointing to the right under the first letter of a word.
3. In arranging a series of pictures into a narrative sequence the child should be required to follow a left-to-right sequence.
4. Point out to pupils that the left side of a word is the beginning of that word and that the right side is the end of that word.
5. Use mechanical devices such as the *Controlled Reader* to demonstrate the reading sequence. This particular machine permits thought units to appear in a left-to-right sequence.
6. In referring to a line of print, to a caption under a picture, or to written directions on the bulletin board, sweep the hand from left to right while indicating that in reading this is the required direction.
7. Demonstrate to children how meaning is distorted when the word is read from right to left. "Jim was in the barn" is quite different from "Jim saw in the barn." Some success may be obtained by teaching the child what a reversal is, how it is made, and what the results look like.
8. Let children engage in left-to-right tracing exercises. Initially these are finger tracing exercises; crayolas and pencils may be used later. These exercises also develop skill in staying on a line or in making an accurate return sweep. The child may trace a line, numbers, words, and strokes, or he may draw geometric figures in left-to-right progression. The "reading" of the calendar also is helpful in developing the left-to-right skill. Figure 7-6 illustrates some of the possibilities.
9. In demonstrating left-to-right progression in monosyllabic words, put each letter in a block and number the blocks in a left-to-right direction as in Figure 7-6.
10. Require the pupil to write only one word on a line. The first letter is placed at the extreme left edge of the paper.
11. Require the pupil to cover the word with a card and move it slowly to the right, thus exposing one letter at a time in a left-to-right progression. The same process may be followed in reading an entire line of print.
12. Let the pupil engage in choral reading, provide alphabetizing and dictionary exercises, and let him use the typewriter.
13. Demonstrate to children that by changing the *d* to *b* in the word *dad* it becomes *bad*. Children should learn that words are pronounced in a left-to-right direction and that this is done by beginning with the first letter. Ask them to form other words from a list of given words by changing the first letter.
14. Let the pupil trace a word written in manuscript or cursive script. As he traces the word, he should speak out each part of the word.

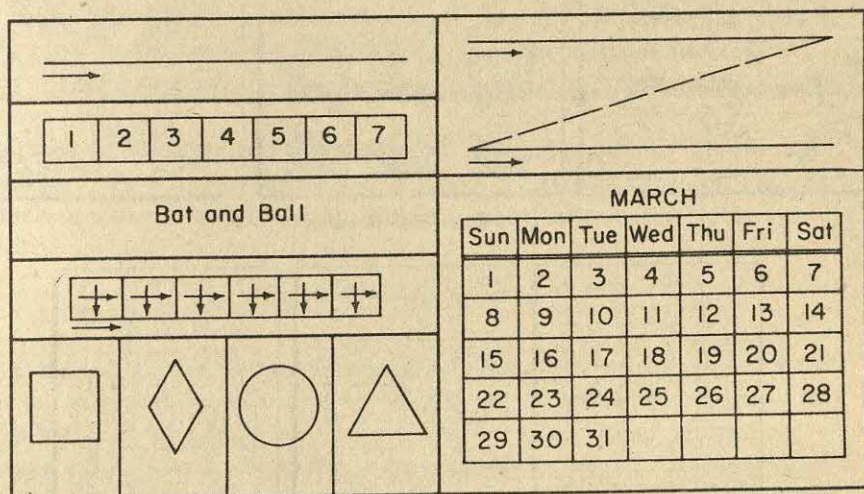


Figure 7-6. Left-to-Right Tracing Exercises

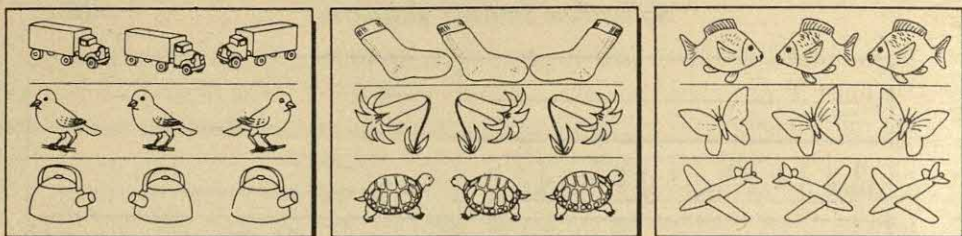
Some authorities suggest that there must be finger contact while tracing; others, that there should be pencil contact. The child continues this until he can reproduce the form from memory. He should have met the word in a reading context, and eventually files the word in an alphabetical file. Another method has the child write the word as the teacher speaks the sounds of the word in a left to right progression.

15. Drill children on exercises similar to those on p. 164.
16. After the child has learned to read and can handle the alphabet, the teacher may want to check the pupil on a list of words similar to the one below. Each word, if reversed, will make a different word.

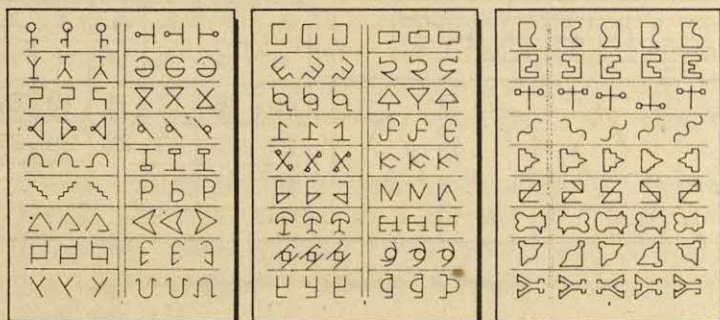
nab	net	pit	mad	tug	pal
bat	pin	top	den	gum	ram
bin	bun	bad	dog	wed	rap
but	on	bag	nod	won	rat
pan	Pam	Mac	dot	bus	saw
mat	tap	cod	bud	gas	

How to Handle a Book

Teaching the child how to handle a book ordinarily does not present a difficult problem. This does not mean that the pupil does not need guidance. He must be shown which is the front of the book, how to turn the pages, how to read from top to bottom and from left to right, and how to hold the book. He should learn to identify the title page and to think through the story by sequentially looking at the pictures. He must



(1) Differences in Direction °



(2) External Reversals and Inversions °

GO	mm	bp	lf	p	dbp	a	eo a
GC	rn	db	tf	z	v x z	y	w y v
qp	BP	vw	j j	e	oe a	u	un r
dq	DB	vy	il	r	rn h	o	eo a
uu	ge	hn	PR	h	dh b	l	l i j
rn	oo	hr	BR	m	n r m	g	q p g
WM	oc	FF	hr	f	f t l	h	k h r
VM	ce	EB	kh	a	ea o	b	b d h
AE	QO	aa	VY	d	p b d	e	oe c
AH	GQ	dg	WY	b	b q h	m	n r m
HH	nu	lt	ec	i	j l i	s	z s e
FE	rr	ft	oe	k	h k r	f	f t l
				n	r m n	n	r n m
				q	q d b	w	w y v
				s	z s e	p	q p g
				t	f k t	x	y w x
				c	co e	r	r v n
				v	w v y	q	q g q p

(3) Common Letter Confusions °

yes	yes	yell	yet	year	will	bill	hill	mill	will
each	eat	east	earn	each	make	make	rake	fake	cake
should	should	shoulder	should	shouted	pan	man	tan	ran	pan
white	which	white	while	with	tell	sell	tell	tell	well
must	much	most	must	most	book	look	book	hook	took
next	next	nets	text	next	bed	led	red	wed	bed
when	where	whom	went	when	play	plan	play	place	plaid
there	these	three	there	them	work	more	word	work	worm
every	ever	even	very	every	stoop	stood	stool	stop	stoop
other	oven	other	over	another	card	carh	card	carp	cart
friend	fried	afraid	find	friend	pull	push	pulp	pull	putt
said	and	sail	said	sad	goat	good	goal	good	goat
girl	gril	grid	girl	grit	tide	tire	tide	time	rile
keep	kept	been	peek	keep	lost	last	list	lest	last
own	now	own	our	won	head	heard	head	head	hand
ate	eat	tea	ate	are	board	beard	board	board	bread
read	dear	read	bear	real	house	horse	house	hose	hoarse
from	more	form	from	from	truck	track	trick	truck	tuck

(4) Common Word Confusions °

° "Visual Discrimination," Level 1, *Reading Readiness Catalog*, Continental Press, Inc. Reproduced by permission.

learn to take care of the book, handling it carefully and with clean hands. He must learn to hold the book at an appropriate distance from the eyes. He must learn where to find the right book and return it to the proper place after using it.

Much of the guidance here is of an incidental nature. As the child handles library books, the teacher observes the pupil's behavior. He may find it necessary to discuss the subject in the classroom or privately.

The Use of Readiness Tests

Observation of children and recording these observations on Readiness Inventories are a good means for identifying the child who is ready for reading. Teachers have for years made use of informal techniques to gauge a child's readiness and have been rather successful in their efforts.* In this chapter, however, we have discussed six aspects of reading readiness that may be more easily and more accurately determined through standardized tests.

Although studies ^{2, 20} indicate that scores on reading readiness tests are not completely accurate predictors of reading achievement, readiness tests cannot be summarily discarded. Bremer ² points out that perhaps their greatest value is in the diagnosis of the pupil's deficiencies. They indicate areas of strength and weakness and help the teacher in making adequate provisions for individual needs. They help in the planning of children's learning experiences. They should increase the teacher's efficiency in teaching, and they may prove useful in setting up reading groups. This is especially true if grouping is flexible and if reading groups are formed on a need basis. The tests identify children with the same basic deficiencies.

Success on readiness tests, however, does not necessarily indicate that the child is ready for reading. On the other hand, neither should readiness tests be looked upon as standards that the child must attain.

The following readiness tests seem especially useful:

1. *American School Reading Readiness Test*. Public School Publishing Company, Bloomington, Illinois.

A group test, it provides measures of vocabulary, discrimination of letter forms and letter combinations, discrimination of words by selection and matching, recognition of geometric forms, following directions, and memory of geometric forms.

2. *Diagnostic Reading Tests: Reading Readiness Booklet*. Mountain Home, North Carolina.

This group test measures the child's ability to grasp relationships, his skill in eye-hand and motor coordination, his visual and auditory discrimination, and his vocabulary.

* For a more complete evaluation of informal testing procedures, see Smith and Dechant, *Psychology in Teaching Reading*, pp. 416-419.

3. *Gates Reading Readiness Test*. Bureau of Publications, Teachers College, Columbia University, New York.

A group and/or individual test, it provides measures of picture directions, word matching, word-card matching, rhyming, and reading and naming letters and numbers. The picture directions test measures the child's ability to listen for directions, to make interpretations of pictures, and to carry out verbal directions. The word-card matching test requires the child to select from four words the one that is like the word shown on a flash card.

4. *Harrison-Stroud Reading Readiness Profiles*. Houghton Mifflin Company, Boston, Massachusetts.

This test is designed for kindergarten-first grade and measures the ability to use symbols, to make visual discriminations, to use the context, to make auditory discriminations, to use the context and auditory clues, and to give the names of letters.

5. *Lee-Clark Reading Readiness Test*. California Test Bureau, Los Angeles, California.

This group test measures the ability to note similarities and differences in letter forms; it measures the child's vocabulary and concepts; and it tests the ability to match letters with letters and words with words.

6. *The Metropolitan Readiness Test*. World Book Company, Yonkers 5, New York.

This group test contains measures of (1) word meaning (the child selects from four pictures the one that is a picture of the word used by the examiner); (2) sentence meaning (the child must comprehend a sentence); (3) information (child picks the picture that depicts what the tester is describing); (4) matching (the child must select from four pictures one that matches with a sample picture); (5) numbers (various knowledge about numbers is tested) and (6) copying (this measures visual perception, motor control, and the tendency toward spatial reversal). A supplementary test requires the child to draw a man. It measures perceptual maturity and motor control.

7. *Maturity Level for School Entrance and Reading Readiness*. Educational Test Bureau, Minneapolis 14, Minnesota.

This test identifies those children ready to enter first grade, and ready for reading instruction. It yields a Maturity Level Score and a Reading Readiness Score.

8. *Monroe Reading Aptitude Test*. Houghton Mifflin Company, Boston, Massachusetts.

This test, part group and part individual, is designed to analyze five elements required for successful reading: visual discrimination, auditory discrimination, motor control, oral speed and articulation, and language.

9. *Murphy-Durrell Diagnostic Reading Readiness Test*. World Book Company, Yonkers 5, New York, 1949.

This test provides measures of auditory and visual discriminations and learning rate.

10. *School Readiness Inventory*. Educational Test Bureau, Minneapolis, Minnesota.

This test is designed to estimate readiness for beginning Grade One. It inventories the following: footwork and balance, handwork and vision, speech and language, personal independence, and social cooperation.

Summary

Although the various readiness skills have been discussed separately in this chapter, they must be developed simultaneously. The child should advance in each on a somewhat even front. Each day the teacher needs to help the pupil to grow in conceptual thinking, in auditory discrimination, in visual discrimination, in his knowledge of the alphabet, and in his ability to deal with reading as a left-to-right activity. The teacher begins with each child at the level that he has attained in *each* of these skills. And each of the readiness tasks is further developed in the first and second grade.

The child needs to learn that words stand for the real thing—that they have meaning. He needs to learn to use the context to identify the word, and he needs to use the spoken context *and the beginning sound* of a word to identify the word that makes sense in the sentence.

Readiness workbooks, offered as a part of the various basal series, provide numerous exercises for the development of these skills. Chapter 14 also lists numerous other manuals and materials useful in developing reading readiness. In this chapter we have suggested readiness exercises.

Readiness exercises are valuable only in as far as they make it possible for the pupil to acquire a reading skill with greater ease. The teacher constantly needs to explore the “transfer value” of the readiness materials. He must constantly evaluate the usefulness of these materials.

Questions for Discussion

1. Define reading readiness.
2. Discuss how a field trip to a fire station might help a child to develop conceptual thinking and thereby improve his readiness for reading.
3. What is the purpose of picture storybooks and picture dictionaries in the readiness program?
4. Examine one of the reading readiness manuals listed in Chapter 14, especially one of those offered by a basal reading series, and list the skills in which the series gives practice. Prepare yourself in the teaching of one of these skills and present it in class.
5. What are the stages of development in conceptualization?
6. What factors in reading readiness are most amenable to training?
7. Discuss five activities that are useful in teaching conceptualization.
8. What do we know about the development of auditory discriminatory skills?
9. Discuss five activities that teach auditory discrimination.
10. What is the value of teaching matching of objects, pictures, and letters to beginning readers?

11. Is there any identifiable sequence in teaching visual discriminatory skills, especially of the letters of the alphabet, and is it desirable to follow the sequence?
12. Explain the origin of reversals and suggest activities for remediation.
13. Examine, administer, and evaluate one of the readiness tests suggested at the end of the chapter.

Basic Reading Principles

1. Reading readiness is the teachable moment for each of the reading skills.
2. Auditory deficiencies are positively correlated with poor reading when instruction in reading puts special emphasis on hearing.
3. Deficiencies in hearing the higher frequencies are associated positively with reading disability.
4. Matching of nonword forms and pictures has dubious value in word recognition training.
5. The poor reader is distinguished from the good reader (1) by his inability to perceive the relationship to one another of the details within the total word shape, or (2) by his inability to perceive parts and details, in which case he perceives unanalyzable wholes. He is weak in the ability to analyze the visual and auditory structures of words, and in the ability to synthesize phonetic units to form whole words.
6. Knowledge of the names of the letters of the alphabet shows a higher relation to achievement in reading than does mental age.
7. The names of the letters should be taught before the sounds of the letters are introduced.
8. Reversals after the third grade tend to be associated with poor reading. This is true whether they are interpreted as symptoms of left or crossed dominance or a spatial disorganization and figure ground disturbances.
9. The more similar the symbols, the greater is the tendency to reverse.
10. Retarded readers before the age of nine tend to have greater difficulty in distinguishing right from left than do unselected children.
11. Retarded readers and young children have excessive difficulty with the order and orientation of shapes, especially words.

Part Four

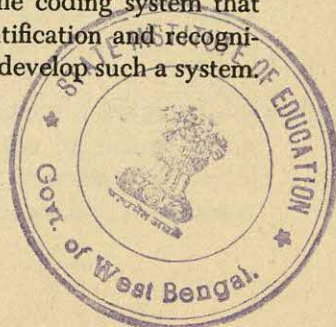


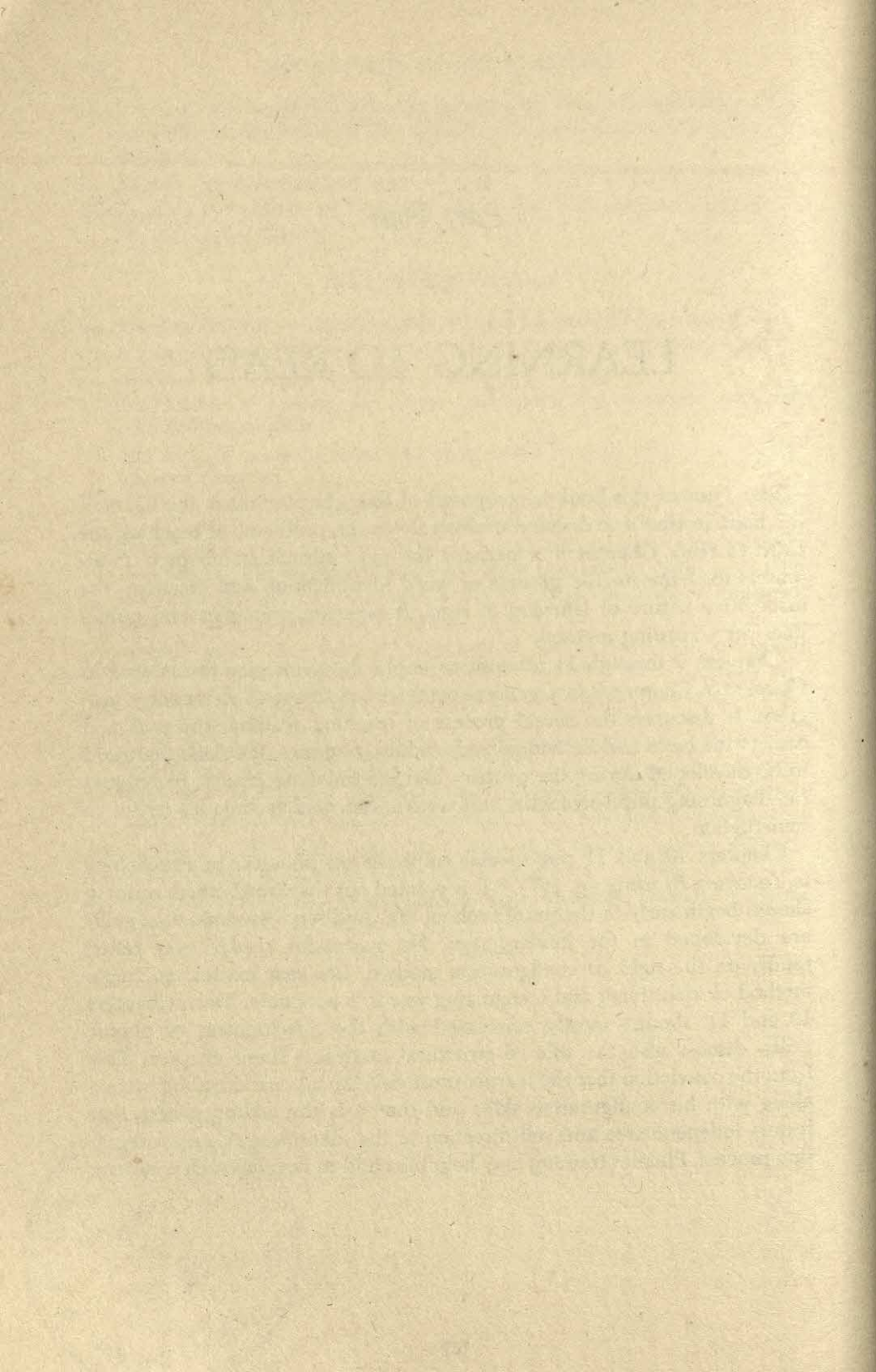
LEARNING TO READ

Part Four of this book is composed of four chapters. It is the heart of the book in that it is devoted exclusively to the problems of teaching the child to read. Chapter 8 is perhaps the most significant chapter. It attempts to delineate the process of word identification and discusses the associative nature of learning to read. It presents principles and guidelines for a reading method.

Chapters 9 through 11 attempt to apply the principles formulated in Chapter 8. Chapter 9 is a general overview of the total elementary program. It discusses the actual process of teaching reading, the pros and cons of the basal and individualized reading programs, the skills that need to be developed during the primary and intermediate grades, techniques for diagnosing pupil strengths and weaknesses, and techniques useful in remediation.

Chapters 10 and 11 put special emphasis on phonics. In *Psychology in Teaching Reading* (p. 197) ⁴⁴ it is pointed out that word-attack training should begin early in the pupil's school life. Auditory discrimination skills are developed in the kindergarten. No successful reader ever relied totally on the sight or configuration method. For that matter, no single method of identifying and recognizing words is adequate. Thus, Chapters 10 and 11, though mostly concerned with the development of phonic skills, discuss also the role of structural analysis. These chapters flow from the conviction that the learner must develop a general coding system along with his configuration skills and that it is the coding system that fosters independence and self-direction in the identification and recognition process. Phonics training may help the child to develop such a system.





8

IDENTIFICATION AND ASSOCIATION

Meaning is an absolute prerequisite in reading. Even so, it is only one aspect of the reading process. Reading cannot occur unless the pupil can identify and recognize the printed symbol. The pupil cannot read unless he can associate the appropriate meaning with the appropriate symbol.

This chapter consequently concerns itself with two elements: (1) the identification of the printed symbol, and (2) the association of meaning with the symbol.

First, let us examine how the child learns to associate meaning with the appropriate symbol. Logically, identification of the symbol comes before the association of meaning with it. However, the latter phase is more easily discussed and is much less controversial than is reading method.

Reading as an Associative Process

Learning almost universally involves an association of the unknown with the known. To understand this process it is well to acquaint ourselves with the "classical conditioning" experiment.

Before we do this let us make a few observations. Association of meaning with a symbol and "reading" are quite different from the identification of a symbol. The ability to cognize symbolic units, to *identify or recognize words*, is not predictable by the IQ. The IQ best predicts the pupil's ability to take meaning to the symbolic unit, to cognize semantic units, or to excel in verbal comprehension.²⁰

"What is the basic word identification skill?" Many answers to this question reflect a confusion of this question with the following: "What is the basic reading skill?" The answer to the latter question is a twofold answer, involving both the identification of the symbol and the associa-

tion of meaning with it; the answer to the first question merely concerns itself with the discrimination of one word from another word.

Another point needs to be clarified before we consider the major topics of this chapter. Association of meaning with a symbol is one of the basic reading skills. The acquisition of meaning, discussed in Chapter 12, is not a major reading skill. The definition of reading suggests this distinction. Reading is the process of giving the significance intended by the writer to graphic symbols by *relating* them to our previous fund of experience. This definition stresses the importance of relating meaning as obtained through experience with the symbol. The teaching or development of meaning, then, is a distinct process. It is prerequisite for reading, but is not reading.

Meaning can be associated with the printed word only by associating the word with an experience, whether real or vicarious, or by associating it with another symbol (spoken word) that has meaning for the child. For most children this is a natural process. Teachers do not really provide the child with a method in making the association but only with the opportunity to do so (p. 7).³⁰

Finally, the meaning of a word may be the verbal responses made to the word or to the object which the word denotes. Staats and Staats⁵³ prefer to think of meaning as being the mediating response elicited by the *object or experience itself* and refer to the spoken word or symbol as the word's verbal associate. They suggest that two distinct processes are involved.

CLASSICAL CONDITIONING

Pavlov³⁹ found that a dog salivated immediately when food was placed in its mouth. This he termed the unconditioned reflex. In a simple experiment, a tone was sounded (conditioned stimulus) and the dog then was presented with a plate of powdered food (unconditioned stimulus). Initially the tone did not arouse a salivary response, but after frequent associations between the tone and the food, the sound alone caused the dog to salivate. The dog had become conditioned to the tone.

Conditioning, then, is a term used ". . . to denote the behavioral fact that a stimulus inadequate for some response could become adequate by virtue of being combined one or more times with a stimulus adequate for the response . . . (p. 173)."⁴³

As we examine how a child learns to speak and to read, we see a strik-

* Gregory Razran, "A Note on the Use of the Terms Conditioning and Reinforcement," *American Psychologist*, 10 (April 1955) 173-174. Reprinted by permission of the American Psychological Association.

ing similarity between these processes and the classical conditioning experiments. Certainly, both presuppose an association process. Reading is the linking of written or printed symbols with experience,* just as the salivary response was the result of associating the tone with the food.

ASSOCIATION AND LEARNING TO SPEAK

Let us examine more closely the process of learning to speak. One theory³³ assumes that the baby at a very early age engages in reflexive and instinctive babbling. The child produces all kinds of vocalizations. By chance or trial and error he may enunciate the syllable *da*. An adult in speaking the syllable *da* causes the child again to "hear" and to speak the particular sound. The adult by imitating the baby eventually gets control of the baby's vocal responses and gets the baby to imitate adult speech.³³ Gradually, the child will combine two syllables, such as *da* and *all*, to produce the word *doll*. The adult then shows the child a doll and says the word *doll*. At this point an association between an experience (meaning) and the symbol *da* occurs. Eventually, the sight of the doll alone elicits the syllable *da* and the meaning of *doll*. The process is now complete. The child has associated meaning with a spoken symbol. He has learned to speak. Children frequently have associated meaning with the spoken word or the printed word long before they can speak or read. Word comprehension is not the same as word production.

Another theory (p. 72),^{33, 29} sometimes referred to as the *babble-luck* theory and originated by Thorndike, suggests that if the infant is fortunate enough to produce a sound similar to an actual word used in the language, and if an adult hears and rewards this sound, the child will tend to repeat that sound. Unfortunately, this theory assumes that all speech development begins with the child. The child must first make the appropriate sound. In reality, children learn to sound many words that they have *heard* others speak.

Not fully satisfied with either of the aforementioned theories, Mowrer (p. 71)^{33, 29} suggests that children learn to speak those words that have taken on a secondary reinforcing quality. If the mother, while supplying the child's wants, speaks certain words, the words occur in a "good and pleasant" context and the child will imitate that sound. He will repeat it whenever he wants to make a "situation without mother" more like the "situation with mother." Since words, however, also bring social approval, the satisfaction of one's wants, and control over others, words soon are repeated for other reasons.

* For an additional discussion of conditioning see Smith and Dechant, *Psychology in Teaching Reading* (pp. 57-59).⁴⁹

Each theory allows for an association between the experience (object) and a symbol. In this way meaning is made real, and speech—the communication of meaning—becomes possible.

ASSOCIATION AND LEARNING TO READ

Learning to read is a further extension of the speech process. Generally, the child already has developed most of the meanings that he encounters in his early reading experiences. He also has associated these meanings or experiences with an aural-oral symbol. Teaching this child to read then means that the teacher must get him to identify the visual symbol and to associate with it the meaning that he already has associated with a spoken symbol. The child must associate the spoken and written word a sufficient number of times so that he comes to react to the written word with the same meaning that he previously took to the spoken word.

Rarely in English is meaning associated with the written symbol prior to associating it with the spoken symbol. The English language has an alphabet that represents sounds which in turn symbolize meanings. Chinese is an ideographic language in which the written symbols convey meaning directly.

Thus, in learning to read, the spoken word is the familiar stimulus; the written word is the novel stimulus. Gradually, with repeated associations between the written and the spoken word, the child brings to the written word the same meanings that he previously attached to the spoken word. Through association, meaning has become attached to the written word (p. 58).⁴⁹

Association of the spoken and the written word seems necessary in learning to read. In Chapter 2 we identified two basic facts: (1) reading is a sensory process; and (2) reading is a perceptual process. Here we have stressed that reading also is an associative process.

Whether learning to read always or ever involves conditioning is another consideration. Conditioning cannot explain such facts as our cognitive experiences—thinking, insight, or understanding. Even though we know that a stimulus will tend to evoke the same response in the future, if the response has repeatedly occurred in temporal contiguity with a stimulus and has caused a reduction of a need (pp. 731-732),²⁹ conditioning cannot explain the understanding of relationships between objects or of relationships between relations. Conditioning, furthermore, is based upon neurological and physiological conditioning. This may be cut short in human learning.

Figure 8-1 illustrates the striking similarity between classical conditioning and the processes of learning to speak and to read.

Figure 8-1

<i>Comparison of Classical Conditioning and Learning to Speak and to Read</i>	
Meat Powder (US)	Salivation (UR)
Sounding of tuning fork (CS)	Salivation (CR)
.....	
The Object (Doll)	Meaning
Spoken word (<i>Da</i>)	Meaning
.....	
Spoken word (Doll)	Meaning
Written word (Doll)	Meaning

Legend:

US—unconditioned stimulus
 CS—conditioned stimulus
 UR—unconditioned response
 CR—conditioned response

IMPLICATIONS FOR TEACHING READING

Some children may experience much difficulty in associating meaning with the written word. Many of these difficulties stem from failure to properly identify the word. Some may not see the word distinctly and correctly. Some may even fail to look at the word. Thus, reading should always be a "look while you say" activity. The tracing or writing method of teaching the word is effective precisely because it forces the child to pay close attention to the word and thus to make a proper association.

Children also learn to identify a word by rather intangible properties of the word. Thus, they identify the word by a certain splotch on the paper on which the word is printed. They look at the word *house* and preceptually read *horse*.

The following incident illustrates the statement above. A certain major had a dog that reacted with joy and excitement whenever his master was ready to go out for a walk. One day the major, pretending to go out, put on his hat, got his cane, and made ready for his walk. To his surprise the dog just sat in his corner. After investigation it was found that the major

had not checked, as he usually did, whether the drawer containing his valuables was locked.

The rattling of the drawer was the stimulus that to the dog meant that the master was ready to venture out of the house. For some children the stimulus for the printed word may be just as inconsequential and just as erroneous. We constantly must check on the validity of the child's perceptions. Only if his perception is valid, can the child make the proper association between meaning and the word.

Other errors in association of meaning with the word result from inadequacies in meaning. The child simply has not had the experiences necessary to develop meaning.

Finally, the association process itself may break down. Generally, the child needs more than one association between stimulus and meaning. The child needs to see the word in many and varied situations. Varied practice extends and refines meaning; repetitive practice makes the association habitual. Practice must be varied so that the child's perceptions and meanings for a word come closer to the meaning intended by the writer and practice must be repetitive so as to increase proficiency in meaningful response.

*Methods of Word Identification **

Now let us examine how the child learns to identify the printed word, how he discriminates it from every other word, and how he recognizes it upon seeing it again in a different context. Identification is the initial acquaintance with a word, recognition is a subsequent acquaintance. The child then "recognizes" the word form as one that he previously identified and that he now knows. They are not the same process and the means of identifying a word may be completely different from those of recognition.

The history of the teaching of reading is replete with the various methods used to help the child to identify and recognize the printed symbol. These methods have been labelled the synthetic, analytic, or analytic-synthetic methods.

Synthetic Methods

Methods that begin with word elements, with letters (Alphabet Method), with sounds (Phonic Method), or with syllables (Syllable Method) are called synthetic methods. They are so called because the letters, sounds, and syllables must be combined (synthesized) to form words.

* See Smith and Dechant, *Psychology in Teaching Reading*, (pp. 193-205).⁴⁹

THE ALPHABET METHOD

The earliest formal attempt in teaching reading used the alphabet method, in which each word was spelled out. The New England Primer in 1690 and the Webster American Spelling Book in 1793 were based on the ABC method. The pupil first was taught to recognize the letters and gradually proceeded toward the word.

Recent studies show that a knowledge of the letter names is a good indicator of success in learning to read. The pupil who has learned to associate a name with a letter has already learned a basic reading skill. He has learned how to discriminate one visual form from another (an A is different from a B), and he has associated a sound and consequently a name and meaning with that symbol.

THE PHONIC METHOD

The second synthetic method to be used by teachers was the phonic method. It was originated by Ickelsamer in 1534 and was introduced to America in 1782 by Noah Webster. The alphabet method starts with the name of the letter; the phonic method, on the other hand, starts with the phonetic sound of the letter.

THE SYLLABLE METHOD

The third synthetic method is the syllable method. Here syllables are combined to form words. It is used, for example, in African languages like the Sudanese Dinka. Since structural analysis is based on syllable analysis, a syllable approach is an essential aspect of today's reading program.

Perhaps, through an analysis of one synthetic method we shall understand better the approach used in synthetic methods generally. Synthetic methods may be recommended for normal teaching of reading, for remedial teaching, or for both. The Gillingham-Stillman method emphasizes remedial reading.

The Gillingham method¹³ begins by teaching the child a few short vowels and consonants that have only one sound. It does not use letters that if reversed become new letters. Thus, initially it steers clear of letters like *b* and *d*. It is a combination method, using the auditory, visual, and kinaesthetic sense avenues (pp. 40-42).¹⁶ The teaching processes that result in the association of the visual, auditory, and kinaesthetic processes are called linkages. The method consists of eight such linkages:

Linkage 1. The name of the letter is associated with the printed symbol; then the sound of the letter is associated with the symbol.

Linkage 2. The teacher makes the letter and explains its form. The pupil traces it, copies it, and writes it from memory. The teacher directs the pupil to move in the right direction and to begin in the right place when making the letter.

Linkage 3. The phonogram is shown to the pupil and he names it. The child learns to associate the letter with its "look" and its "feel." He learns to form the symbol without looking at the paper as he writes.

Linkage 4. The teacher says the phoneme and the child writes it.

Linkage 5. The child is shown the letter and asked to sound it. The teacher moves the child's hand to form the letter and the child sounds it.

Linkage 6. The teacher gives the name of the phonogram and the pupil gives the sound.

Linkage 7. The teacher makes the sound and the pupil gives the name of the letter.

Linkage 8. The teacher makes the sound and the pupil writes the phonogram. Sometimes the pupil writes without looking at the paper, and also names the letter.

At present the phonic method is the most discussed synthetic method. It is now generally accepted that phonics have a prominent place in a reading program. In fact, some feel that phonics instruction may well be more beneficial than any other skill in helping the pupil to develop a sight vocabulary and to become an independent reader (p. 181).²⁴ However, questions as to when and how we might introduce phonics most effectively are still unanswered (p. 195).^{48, 49}

Phonics alone do not make a reading program. No amount of phonic training will lead the child to understand the meaning of a written word if the child has never associated an experience with its oral equivalent. Phonics are a method of identifying and recognizing words, and word recognition is only one aspect of the reading process. To be readers children must: develop a grasp of meaning, become accurate and independent in identifying words, and want to read (pp. 11-17).¹⁹

Experience has shown that few readers become very proficient unless they manage to learn more than one way of attacking words. No one method is sufficient in and of itself. The very fact that pupils are different and that they do not learn by the same methods ought to keep the teacher from putting undue emphasis on any one method. What is food for one may well be poison for another.⁸

In general, most methods of teaching reading have been found to be successful with some pupils in certain conditions. Thus, research^{9, 15, 36, 44} has shown that children who have been taught to read by synthetic methods, especially the phonic method, frequently have become independent readers. They have confidence in attacking new words, have

relatively little difficulty with pronunciation, generally have been good oral readers and spellers, and may even have been good comprehenders.

A recent study⁷ involving 1652 freshmen students at Stanford University, San Jose State College, and City College of San Francisco indicates that the less knowledge the student had of the relationships between the letter combinations which make up words and the sounds of those words, the poorer were his chances of being good in comprehension. The poorer the phonic ability, the poorer the student's reading seemed to be.

The most frequent criticism of the phonic method suggests that it leads to "word-calling" and verbalism. The slow learner may indeed become a better word caller than a comprehender. The inadequacies are inherent in the mind of the learner, not in the method.

In most classrooms phonic elements are not learned in isolation and meaning is not ignored. Such criticisms do not invalidate the argument that the child should make use of his language background and the sound of the spoken word to identify and to get to the meaning of the word. The sound of the word should be used to get to the meaning. If the child has been taught that what can be said also can be written, it seems most natural for him to want to work out the pronunciation of the printed word and then to associate with it the meaning that he previously associated with the spoken word. Reading in this sense is "the responding to visual forms with vocal or subvocal ones. The 'thoughtful' or 'meaningful' reactions that accompany or follow this process are responses to the vocalized or subvocalized forms and the underlying neurophysiology." *⁵⁰

Recently writers^{51, 55} have suggested that present reading programs spend too little time on the basic sounds and the basic sentence structure of the language. But these same people, while emphasizing the relationship between reading and linguistics and between the letters of the alphabet and the sounds of the language, intimate that this does not mean that the child should learn to associate sound with a *single* letter. This, they suggest, is the basic fault of phonic methods.

Analytic Methods

Historically, the analytic methods of teaching reading are three: the word method, the phrase method, and the sentence method. They are called analytic methods because they begin with the word, phrase, or sentence, and these larger units then are broken down into their basic elements.

* James P. Soffietti, "Why Children Fail to Read: A Linguistic Analysis." *Harvard Educational Review*, 25 (Spring 1955) 63-84. Reprinted by permission of the Graduate School of Education, Harvard University.

THE WORD METHOD

The word method is the most common analytic method in use today. It was introduced in Europe in 1648 by Comenius in his book, *The Orbis Pictus*, and was proposed in the United States in 1846 by Russel Webb.

It frequently is termed the sight or configuration method, but often in error. Various sense avenues may be used in teaching the word method. There is a method of teaching reading that begins with the total word, but whose emphasis is on sound, or phonics. It is termed analytical phonics. Another word method emphasizes the kinaesthetic sense avenues and is termed the Kinaesthetic Method. This method is most frequently associated with the name of Fernald.¹²

The Fernald kinaesthetic method has been particularly useful in remedial reading and with teaching brain-injured children. It introduces the word in large cursive or manuscript writing on large strips of paper. The child traces the word, making finger contact * with the paper and pronouncing the word by syllables as he traces. This process is repeated until the child can write the word from memory. The child then writes the word, uses it in a story, and finally reads it in the story that he has developed. The word then is placed in an alphabetical file.

The word is always written from memory and is reproduced as a unit. With practice the child learns to write the word without tracing it. He looks at the word and reproduces it.

Harris (pp. 320-321) ²² describes another method that uses a kinaesthetic approach. He calls it the *Visual-Motor Word Study* method. It is designed for slow learners and combines seeing the word, saying the word, and writing it from memory. After the teacher presents the word visually in context as in a sentence on the board, he then shows the word on a card and pronounces it. The pupils look at the word and pronounce it softly. They then repeat it to themselves a few times. With eyes closed each child tries to form a visual image and then checks his image with the original. The card is removed and each child tries to write or print the word from memory. He then checks his written word against the card. The process is repeated as needed.

The kinaesthetic method has been very successful with remedial readers. However, it has not been used often enough as a regular part of the developmental reading program.

The child comes to school possessing an abundance of kinaesthetic meanings for sensations. He already has *learned how to learn* with this medium. He has felt and touched objects. The object is hot or cold, soft or hard, round or straight.

* Some kinaesthetic methods require pencil contact.

Perhaps the primitivity of the kinaesthetic sense has not been sufficiently utilized in leading the child from the known to the unknown. For example, we do not associate the auditory sound of the word with the kinaesthetic meaning that the child already possesses for the word. It may well be that *all* children may profit from making associations between the various sense organs. They may profit from writing, hearing, and seeing the word.

THE SENTENCE METHOD

The sentence method of teaching reading was emphasized especially in the early 1900's by Huey.²⁷ Huey suggested that the sentence, not the word or letter, was the true unit in language. He inferred that therefore it also was the true unit in reading.

As we noted in Chapter 6, linguists today emphasize that reading is primarily a language process and that the major task facing the child is the mastery of the graphic system that reflects the spoken language system. Lefevre (pp. 247-248)³¹ suggests an analytical method of teaching reading emphasizing language patterns. He emphasizes that meaning comes only through the grasping of the language structures exemplified in a sentence. Meaning thus depends on the intonation, the word and sentence order, the grammatical inflections, and certain key function words. Intonation, or the pauses and stresses in oral language, are represented by capital letters, periods, semicolons, and question marks etc., by the order of the words, by grammatical inflections signaling tense, number, and possession, and by such function words as *the*, *when*, *nevertheless* or *because*. Only by reading structures can full meaning be attained. Or to put it in another way, unless the reader translates correctly the printed text into the intonation pattern of the writer, he may not be getting the meaning intended (p. 250).⁵⁷ Harris (p. 283)²³ notes that

Reading is a continuing cycle of excitation and reaction in which each moment of perception produces a feedback effect which sets the person for the following perception. In this rapidly repeating cycle the sequential perceptions are apprehended as forming linguistic sequences that convey large units of meaning.*

Perhaps, Huey was speaking of something quite different than method of word attack as indeed the linguistic approach does today. It may well be the sentence which is the basic unit of meaning, but the word, the

* Albert J. Harris, "Perceptual Difficulties in Reading Disability," *Changing Concepts of Reading Instruction*, ed. by J. Allen Figurel, International Reading Association Conference Proceedings, 6 (1961) Scholastic Magazines, New York. Reprinted by permission.

letter, or the sound may be the basic unit of identification and recognition. We are more concerned at present with recognition than with comprehension, with identification rather than with reading. Meaningful reading seems to occur only when the reader comprehends the total sentence unit. However, few would suggest that the pupil should learn to identify sentences as units. The word seems to be the largest linguistic unit that readily lends itself to identification. Thus, the sentence method and the linguistic method may be the way we should read; they may have relatively little significance for identification.

Analytic-Synthetic or Synthetic-Analytic Methods

Today most teachers probably use a combination or eclectic approach. Some begin with the total word and then *more or less* simultaneously break it down into its phonemic elements (Analytic-Synthetic Method). Others begin with the phonemes and then combine these to form meaningful words (Synthetic-Analytic Method).

What is the rationale for a combination or eclectic approach in reading method? Why do most teachers today use both a synthetic and an analytic approach, even though many disagree on the question of whether reading teaching should begin with an analytic or synthetic approach?

Research and experience have shown that for genuine independence in reading children need *both* analytic and synthetic approaches. Children need to observe the whole word and they need to look and listen for those characteristics that individualize a word.⁴⁵

Goins^{17, 18} found that good readers were able to keep in mind the total configuration (word) or the total language pattern (sentence) while at the same time attending to parts of the word. The good reader is not preoccupied with details for their own sake. The poor reader is often preoccupied with details, frequently failing to assimilate the details into the whole. The good reader can shift from whole to part or from detail to whole. His perceptual approach shows flexibility and versatility (p. 284).²³

The analytic and the synthetic method are two partial and yet indispensable phases of the total learning process. The child must be able to synthesize the parts into a whole and to analyze the whole into its parts.

The implications are obvious. Synthesis and phonics are an integral part of the reading program. Phonics cannot be relegated to a separate phonics period, to be used only when some other method doesn't work.

The good reader probably is one who uses all the analytic-synthetic methods, intertwining them in such a way that he doesn't even know which one he is using at any given moment.

This brings us to our next point. The psychology of individual differences teaches us that children are different from one another intellectually, physically, emotionally, socially, and *perceptually*. One child benefits

from one type of instruction, another may not. The teaching task then seems to be one of individualizing the reading program, specifically reading method, for the child. One child may best be introduced to reading through an analytical method, another through a synthetic method.

In general, *research and experience have shown that an analytical or whole-word approach has worked with most children.* They have, however, also shown with the same degree of validity and reliability that the analytic method has not worked with *all* children and that the synthetic method has worked with *some* children. No one method has been found to be equally satisfactory in all classrooms with all pupils.

The task facing teachers and psychologists today is that of identifying the pupil who learns best with either one or the other method. Who is the pupil that would best be introduced to reading through a synthetic approach? Who is the pupil that would best be introduced to reading through an analytic approach?

Both the synthetic and the analytic methods have something to offer in the teaching of reading. Effective reading results from a *flexibility* in behavior. This is a legitimate and, it seems, a valuable goal in teaching word attack skills.

In closing this survey of reading methods, perhaps a few words should be said about the numerous "methods" discussed today. We doubt that many of them are properly termed methods. We would prefer to classify them as programs or administrative procedures.

The basal, individualized, Mae Carden, Phonovisual, McCracken, Joplin, Spalding, and Montessorian approaches we would classify as types of reading programs. Cross-grade grouping (which occurs in the Joplin plan), in-class grouping, ungraded primaries, multi-level groupings, and even the individualized approach seem to be more in the nature of administrative procedures and might operate in any reading program.

Beginning with the Whole Word

Much debate has centered about the question: "Should reading teaching begin with the whole word?" Most reading programs today begin by introducing the child to a basic core of whole words that the pupil learns as sight words.

Is there justification for beginning reading in this way? If so, what is the justification?

In the discussion that follows we are not attempting to refute the validity of the word method or to suggest that it is the only valid method. We merely raise the question whether the validity of this method rests on the assumptions presently advanced, and we shall try to state the reasons why beginning with the whole word seems best. Let us evaluate

the arguments commonly advanced for beginning the teaching of reading with the whole word.

In 1885 Cattell and in 1898 Erdmann and Dodge demonstrated that in a given unit of time only three or four unrelated letters could be recognized, but that in the same unit of time it was possible to recognize two unrelated words containing as many as twelve letters (pp. 212-213).²

These and other experiments like them and Gestalt psychology gave rise to the principle that the child characteristically reacts to the *whole* word rather than to its elements. As a consequence, the word became the unit of teaching in reading.

However, such an interpretation is not at all necessary. Studies have shown that even when every other letter has been deleted in a word or words, it frequently is possible to reconstruct the whole word. It is quite possible that the subjects in Cattell's experiment, for example, had learned to infer letters and hence the word, even though they did not actually recognize all the letters or even the total configuration of the word. In World War II, pilots were trained to interpret a fantastic amount of detail in one fixation and to describe it accurately, even though they did not see all the details. Brown (p. 70) ⁶ notes that

Letters in words follow sequential probabilities familiar to readers of English while letters at random are all equally probable at every juncture. It is quite possible, therefore, that Cattell's subjects were reading individual letters rather than "total word pictures" and were able to report more letters than they could possibly identify at very brief exposures because the additional letters could be inferred from those observed.*

Furthermore, in the experiments mentioned above the subjects already knew how to read. They were recognizing rather than identifying the words. Unfortunately, the appropriate method of recognizing a word may not be the appropriate method for teaching word identification. Even though the mature reader may react to the *total* word in recognition and meaningful interpretation, it does not follow that he does so in learning to identify the word. The unit of meaning and of recognition may not be the unit of identification. Or to put it in another way, words may be the basic meaning units but are not necessarily the basic units of visual identification or even of recognition.

The mature reader sees the word as a Gestalt or as a whole. The word's configuration or physiognomy stands out from the letters that compose the word, giving it individuality. The word's form becomes the figure and stands out from the ground and from the letters. The mature reader perceives the figure. He sees the characteristic features of the word.

* Roger Brown, *Words and Things*, © 1958, Free Press, Glencoe, Illinois. Reprinted by permission of The Macmillan Company.

The beginning reader has not attained such perceptual refinement. He may quite frequently see the letter as a distinct Gestalt or form, and indeed there is no difference between the perception of a letter and a word. The letter is as much a Gestalt as is the word. The simple fact is that mature readers are capable of perceiving more complex Gestalten than are beginning readers, but even they have to analyze some words into their parts.²⁸

The second major support for the whole-word method also came from Gestalt psychology. This theory teaches that the perceiver generally reacts not only to the whole but to the *meaningful* whole in perceiving reality. The person sees a house not as a bundle of parts, but as a distinct and organized unit. Reading teachers immediately inferred that in learning to read the child perceives the smallest linguistic unit that has meaning and that can stand alone as a part of an utterance. This unit is the word.

The correctness of this interpretation seems to depend upon the meaning of the word "meaningful." Although meaning is associated with the word, this is not what is meant by "meaningful" in Gestalt psychology. Meaning in this theory refers to the organization or structure rather than to the object or event to which the word refers. It is systematic meaning rather than referential meaning (p. 71).⁸

Gestalt psychologists look upon perception and learning primarily as the structuring of experience. The learner must perceive the relationship between the parts and from this develops insight. Their experiments were concerned with the learning of meaningful and meaningless materials. Material is said to be meaningful if the person has had some experience with it, if he has organized it, if he has identified its structure, or if previous learning transfers to it. Meaningful materials, in this sense, are already learned materials.

Stroud (p. 437)⁵⁴ points out that:

Meaning, insight, and logical relations are psychological phenomena and have no existence *sui generis* in material of learning. Material is not inherently meaningful; it is endowed with meaning by a reacting individual, and experience, or previous reaction, is a necessary condition. . . . To put the matter in another way, meaningful, insightful, and logical materials are partially learned already.*

Unfortunately, in learning to read there is no such previous experience. The word form or its configuration is not any more meaningful than is a single letter. The learner does not "see" the meaningfulness of its structure. The word form becomes meaningful to the learner (here we are *not*

* James B. Stroud, *Psychology in Education*, © 1956, by Longmans, Green and Company. Reprinted by permission, courtesy of David McKay Company, Inc.

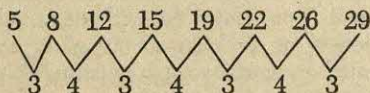
dealing with referential meaning or with the task of associating meaning with the word) if he can see the interrelationship of its parts.

The word, *fitting*, is meaningful only if the pupil understands why it is pronounced "*fiting*" but written *fit-ting*. Each letter of the word receives its pronunciation or "meaningfulness" from the other parts of the word and the total word represents a different systematization or organization than the sum of its parts. Thus, the sound value of letters is established only through their appearance in the context of a word. Experience has shown that the spelling of the long *e* sound in words like *wreath* and *reef* often is confused because of the phonetic similarity of the final phonemes *f* and *th*; the long *e* sound in *seek* and *beak* is rarely misspelled because of the great phonetic dissimilarity between the initial *s* and *b* sounds.⁵⁹

The systematic meaningfulness of which Gestalt psychologists speak can only come through an understanding of the interrelationship of the parts. Only in this way can the pupil transfer his knowledge about a given word to others.

In the Gestalt use of the term, meaningful, the combination, *tac*, has just as much meaning to the child as has the word *cat*. True, after he has associated the word *cat* with a real or vicarious experience, the child will more readily learn it than he will learn *tac*. He is more interested in it, or to put it in another way, the word has greater ego reference for him or has meaning for him since he probably has seen and played with cats, but the form itself may still not be meaningful in the Gestalt use of the term.

Katona²⁸ gives an example of systematic meaning. He asked one group of subjects to learn the sequence, 5-8-12-15-19-22-26-29, from memory. A week later he asked them to reproduce the series. No one was able to do so. Another group learned the organization of the sequence of numbers, namely, that their differences were 3-4-3-4-3-4-3 respectively. Katona used the following technique to illustrate the organization:



The latter group learned and retained the series because learning was "meaningful."

This connotation of meaning is quite different from the concept of referential meaning in reading. To say that a word is "meaningful" is not the same as saying that it has "meaning."

A third argument centers about the most desirable mode of learning. Much time and effort have been spent in establishing a difference between "whole methods" and "part methods" of learning (p. 242).¹⁴ This difference may not be entirely real. The "perceptual whole" is a relative

term. It is not the same for all children in all circumstances. Furthermore, there is no evidence to indicate how much the so-called whole unit entails. The whole may be an entire novel, a chapter, a poem, a paragraph, a sentence, or a letter. Just as a word is both a "whole" and a "part," so also a letter is both a "whole" and a "part."

It is rather arbitrary to say that for every child the perceptual whole is the word. Surely, what constitutes the whole is dependent on the ability, experience, purposes, maturation, perceptual skill, and learning habits of the learner; hence, his general readiness for learning. It also depends on the nature of the materials being learned. Thus, at times it is wise to teach the principle or generalization. Other principles can only be developed inductively.

The psychology of individual differences would suggest that each child characteristically reacts to the "perceptual whole," but that for one child it may be the total word, for another, it may be a part of the word. In general, the whole child reacts, but he is not necessarily stimulated holistically.

Petty,⁴⁰ for example, reports that some first graders prefer to draw form syncretically, whereas others tend to emphasize and select details. Muehl³⁵ also found that beginning readers discriminate among words of similar length on the basis of specific letter differences. Perception is holistic only if the form itself is quite simple and uncomplicated. If the "whole" is meaningless to the perceiver, the details then tend to dominate individual perception. What constitutes a "whole" is different from individual to individual, and is determined by the meaningfulness of that unit to the individual.

Interesting also are the results of eye-movement studies. These studies indicate that children rarely see one word per fixation. In the first grade not more than one-half of a word is usually seen. This means that the child must look at the parts of words, retain them in memory, and combine them mentally to form the total word.

To say that the whole-word method is the correct method of teaching word identification because children characteristically perceive wholes rather than parts is to ignore the basic relativity of the perceptual whole. This statement overlooks the fact that the smallest unit of meaningfulness in perception must necessarily be a whole.

It would seem that the three arguments commonly advanced for beginning with the whole word are of doubtful validity. Does this mean that the whole-word method is invalid? There are other reasons for beginning with the total word.

Any method of reading must keep meaning in the limelight. Reading is never complete without the apprehension of meaning. Reading is the process of securing meaning and it would seem that from the beginning the child should be dealing with meaningful language units.¹⁹ Thus the

child from the beginning should be introduced to the smallest linguistic unit that can stand alone and that has meaning. This is the word. He should learn that he is responding to a symbol with which he can associate meaning—not necessarily systematic meaning but referential meaning.

Starting with the word *and* meaning makes learning to read an interesting and rewarding process from the beginning.¹⁹ These side effects perhaps have greater significance for successful learning and for the development of habitual reading than the method that is used.

Although it is very difficult to prove that for any given child analytical methods harmonize more closely with the child's normal mode of learning than do synthetic methods, we do have other valid reasons for beginning with the whole word.

Emphasizing Parts of Words From the Beginning

Through the years the whole-word method has come to mean the sight method or the configuration method. This is not necessarily correct. The child must *see* the word if he wants to learn it, but the question still remains: What does he see? Does he see the total configuration or outline of the word, or does he react to the parts of the word? Of even greater importance, should he be taught to look for more than the word's general configuration?

For beginning reading the configuration method has been generally effective. However, the pupil also must become self-directive in learning. He must become an independent reader. He needs skill in analyzing those words that are not in his recognition vocabulary. In evaluating reading methods it seems legitimate to ask: Which method best develops the child's skill in attacking new words? Which method makes him self-directive in identifying new words?

Bruner⁵ notes that in perception the person often goes beyond what the senses provide. We already have alluded to the ability of readers to recognize words when certain letters are deleted or to recognize numbers when numbers in a sequence are missing as in 1, 3, 9, and 3, 9, —. As soon as the person sees that the numbers are multiples of three, it becomes obvious that the missing number is twenty-seven. Studies also have shown that in the sentence, "George _____ was our first president," the word Washington is readily read into the sequence. Theories themselves are "good" only if they permit the learner to go beyond the objective data. The theory permits him to order past events and leads him to see new relationships in future data.

The above examples of redundancy are like those observed in grammar (p. 87).³⁸ Thus, the singular subject calls for a verb ending in *s* (Jack sits); a time element calls for an appropriate tense (*Today, I am king*);

a dependent clause calls for an independent clause (If you see him, call me); and the order of words itself is set (The boy sat on the log—the log sat on the boy). Changing the order usually alters the meaning.

The question of what the person learns in the above situation is not immediately answerable. Bruner (p. 44)⁵ believes that the *perceiver learns certain formal schemata that are used to order the probabilistic relationships between the data.*

In support of his assumption Bruner (p. 47)⁵ refers to a study by William Hull. Hull found that in learning to spell the good speller learned a general "coding system" which permitted him to reconstruct the sequence of letters. The good and poor spellers both learned, but *what* they learned was substantially different. Bruner notes that the poor speller learned words by rote; the good speller learned a system, based on the transitional probabilities that characterize letter sequences in English (p. 48).⁵

Bruner (p. 49)⁵ adds that when the perceiver goes beyond what the senses give, he

... does so by virtue of being able to place the present given in a more generic coding system and that one essentially "reads off" from the coding system additional information either on the basis of learned contingent probabilities or learned principles of relating material. Much of what has been called transfer of training can be fruitfully considered a case of applying learned coding systems to new events. Positive transfer represents a case where an appropriate coding system is applied to a new array of events, negative transfer being a case either of misapplication of a coding system to new events or of the absence of a coding system that may be applied.*

The letters in the language are used in a way that permits us to reconstruct them from what we know about the surrounding letters. The letters follow one another in a predictable order. Some sequences never occur in English; others occur frequently. The letter *q* is only followed by *u*. The chances are rather good that the letter *p* completes the word *com act*. The probability of occurrence of the *p* is greater than that of any other letter. Listeners, even though they have not heard a letter or word, infer it from the context.

The three-year-old is using the context or the transitional probabilities that characterize the English language when he uses regular endings such as *elled*, *runned*, or *mans* for the irregular *sold*, *ran*, or *men*, and so does the first grader who reads *come* as *kōm*. Because he was dealing with an irregularity, he got into error. Thus, the letter sequence is not an exact indication of the pronunciation of a word. The pupil must learn that sometimes there are other alternatives, but the system of transitional

* Jerome S. Bruner, "Going Beyond the Information Given," *Contemporary Approaches to Cognition*, © 1957, Harvard University Press. Reprinted by permission.

probabilities or sequence is a valuable cue in perhaps 85 per cent of the cases.

What implications do the data that Bruner presents have for reading method? They *seem* to suggest that the child must develop a coding system that will permit him to simplify the task of having to learn to read thousands of words.

The child must develop independence in word attack. He must become self-directive in learning. He must develop an economical method, and he must develop a method that will provide him clues to other words.

The configuration method is a valuable technique, but it alone cannot guarantee mastery of the multiple words needed for independent reading. In fact, as we shall see later, the configuration method *per se* offers little opportunity for transfer of learning from one reading situation to another. The pupil, it seems, gains much from learning a system based on the probabilities that characterize the spoken-written or sound-print relationships of the English language. This seems possible in our present teaching of reading only through analysis of words, through learning a *system* of phonic and structural analysis.

Unquestionably, both the beginning reader and the mature reader (pp. 110-111)²⁵ frequently identify a word through its general shape and configuration. They see the word as a unified symbol rather than as a collection of related letters.

Experience has shown that the configuration method initially works with "most" children. The child learns the shape or configuration of the word, and his perception of the word is strengthened by the picture that accompanies the word, by using the word in a meaningful context, and by practicing it on flash cards, card games, tachistoscopes, and in spelling lessons.

Teachers of reading should take advantage of a word's general configuration. The length of the word, the number and variety of letters that it contains, and the ascending and descending letters are important clues to the identification of the word. For some children, the configuration method may be the only usable method. They cannot analyze the word into its parts, or have such poor auditory-discriminatory skills that they cannot deal with phonics.

Children differ in auditory, visual, and motor imagery. Some children simply cannot rely on a visual image; others rarely depend on auditory imagery. When the latter "read" a word, they may "see" the word; the former "hear" the word; and those with motor imagery "feel" the word. They recognize the word as one they "traced" previously.


Furthermore, the maturational pattern for each of those sensory modalities may fluctuate from one to another. A pupil may develop slowly in one, more rapidly in another. Others mature slowly in all despite good intellectual ability. Obviously, teaching methods must take these dif-

ferences into account, and readiness programs should be directed to the development of the sensory modalities of each child.

There are other young children and poor readers who do not perceive clearly either the total configuration of the word or the details of the letters. The word tends to be a jumble of lines. Nothing stands out. In Gestalt terms, the figure and the ground are fused and the page looks like an undifferentiated mass. Such children have not acquired an understanding of the importance of particular details in letter shapes, and of their relationship to one another within the total word (p. 29).⁴⁶ Retarded readers, unable to analyze words, sometimes treat words as solid wholes defying analysis; or they may perceive the general structure of words only in a vague and inaccurate way without attending to the details (p. 50).⁴⁶ Vernon (p. 15)⁵⁷ also notes that children may see letters as un-analyzable wholes whose structure cannot be differentiated.

The conclusion seems clear. There is no one method that works with *all* children. The configuration method is a useful method, especially in introducing the pupil to reading. However, the configuration method is not necessarily the only way, nor even the best way of developing independence and self-direction in reading.

Children pay particular attention to the *parts* of words when they are required to discriminate between similar-appearing words. When the total word is not identifiable they attend to special elements and observe individual letters. Four- and five-year-old children and poor readers generally tend to identify words by certain key letters, letters arrangements, or other outstanding characteristics, and for this reason confuse them with other words having the same letter or characteristics.

Such children often are taught to use tricks to identify the word, but these tricks betray them. For example, the word *purple* is identified by the one ascending and the two descending letters. The configuration looks like this:  Unfortunately, the word *people* has the same visual configuration and the ascending and descending letters fall in the same place (p. 65).⁴⁹

Even in normal perception the perceiver may react to the particular characteristic rather than to the total configuration. Terman and Walcutt (pp. 59-60)⁵⁵ note that the faces of Chinese persons look so much alike to Westerners that to discriminate them the perceiver must resort to the details that characterize the individual face.

Adults, who have become proficient in reading, need less and less visual stimulation to identify and interpret a word. They do not always react to the total shape or configuration. The rapid reader is noted for his ability to use minimal visual and perceptual clues. A single letter may be an adequate cue, and the mature reader is quite conscious, even when reading rapidly, of a misspelling of a word such as *percieve*.

Unfortunately, we still find *some* teachers who put all their cards in

the configuration basket. They teach reading as though the average child could and should learn each new word as a distinct form or configuration.

Betts (p. 8)³ notes that

Today there are too many first-grade classrooms in which the so-called "word method" of teaching *beginning* reading is used. When this so-called method is stripped of its "pedaguese," including the term *sight words*, it is merely a tell-the-child-the-word procedure. And telling isn't teaching! The word method, therefore, is a nothing-for-nothing proposition, emphasizing rote learning.*

The child cannot be taught the thousands of words that compose his language as individual units. In fact, some symbols such as \div must be thus learned. However, such an approach would make the English language ideographic, and it would turn the learning of reading into a conditioning process, thus unnecessarily complicating the process for the child.

The memory load that is created by having to learn hundreds of new and ever less discriminable words may be excessive for some children, and may partially contribute to the negative reading attitudes that one sees so frequently among third and fourth graders.

As the differences between configurations become ever finer, with letters curving left and right (b-d) and upward and downward (n-u) (p. 129),¹¹ the child may become confused, lose confidence, and turn against reading. He will have difficulty progressing because the problems of visual discrimination increase proportionately as the rate of the introduction of new words increases (p. 116).²⁴

Asking *all* children to recognize *all* words as configurations also

. . . ignores the very basic fact that *printed words are symbols of sounds* and are made of letters which are symbols of sounds . . . a printed word has meaning *because it is a symbol of a sound*, a spoken word, that already has meaning to the child. It is not the configuration that means; it is the sound, *which the child already knows*. He does not have to memorize the configuration of a word for its meaning . . . he has to learn to recognize it instantly as a *sound*. The instant he hears it, he knows it . . . (pp. 50-51).⁵⁶

Terman and Walcutt (pp. 55-56)⁵⁶ add that:

For the child who does not know the alphabet either as printed letters or as symbols of sounds, the word on the page is a totally new squiggle that is presented to him as a *meaning* and therefore as a completely new learning act that is not related to anything else he knows. . . .†

* Emmett Albert Betts, "How Well Are We Teaching Reading?—Reply," *Controversial Issues in Reading*, Tenth Annual Reading Conference Proceedings, Lehigh University, 1 (April 1961) 8. Reprinted by permission.

† Sibyl Terman and C. C. Walcutt, *Reading: Chaos and Cure*, Copyright 1958, McGraw-Hill Book Company, Inc. Reprinted by permission.

Pooley (p. 41) ⁴¹ suggests that:

One of the principal learning procedures at the early stage is the association of printed letters, singly and in combination, with the typical sounds they represent and the synthesis of these sounds into patterns which the child can recognize as the words he already knows. Some words he will learn as wholes, without the need for analysis; but, increasingly as he meets new words, the power to deal with them analytically in terms of sound related to symbols is a valuable asset.*

The pupil must have an economical method, one that helps both to identify the word with which he is concerned and to use this present learning in the identification and recognition of other words. The method should provide the maximum possibilities for transfer. It should permit the child to benefit from consistent previous learning. It should prepare him to formulate inductively generalizations and rules that further aid word identification and recognition.

The child needs to develop a system for attacking words that allows him to use and apply what he has learned to other words. The configuration of a word is a pattern or Gestalt, but it has relatively little value in the identification of other words. The basic pattern or Gestalt in language seems to be the phoneme-phonogram interrelationship. The basic identification skill is the "seeing" of the sound in the printed word; the association of the phonogram with the phoneme. When the pupil learns a Gestalt for a word that is based on the perception of these interrelationships, he learns a code that is applicable to other words. It seems that this is best learned through a study of phonics and structural analysis.

The basic contribution of phonics instruction may be that it requires the child to visually study the word.³² Phonics instruction forces the child to look at the parts of a word and thus may lead to a somewhat different Gestalt than is seen if the word were perceived strictly as a unit. The artist sees a picture as a Gestalt, but his Gestalt is substantially more detailed and refined than that of the casual observer. Through phonics the pupil may learn to more adequately scrutinize the configuration and thus may develop the habit of being unsatisfied with a general, over-all view of a word.

It is also apparent that even in the most rigid phonics program a certain number of words will be learned as sight words.

Knowing how to sound out words is also more than just a pronunciation skill. It is an effective way of increasing the child's *comprehension* vocabulary to the level of his speaking and listening vocabulary.

Durrell and Nicholson (pp. 264-265)¹⁰ point out that ultimate progress

* Robert C. Pooley, "Reading and the Language Arts," *Development in and through Reading*, Copyright 1961 by The University of Chicago. Reprinted by permission.

in reading is dependent on three factors: (1) The child must notice separate sounds in spoken words; (2) He must be able to see differences in printed letters and words; and (3) He must see the relationships between speech and the written word. He must be able to turn sound symbols into letter symbols and letter symbols into sound symbols. This, we would hope, would give the pupil the independence in reading that seems necessary for genuine achievement.

Summary

In this chapter we have discussed the two basic reading skills: word identification, and the association of meaning with a printed symbol. We have pointed out that a good reading program must give due consideration to both identification and meaning. Neither one by itself is adequate.

We have emphasized the importance of both analysis and synthesis in reading and have suggested that neither the configuration nor the phonic method meets the needs of every pupil nor perhaps *all* the needs of even one pupil. However, since identification of words must be economical, must allow for the greatest amount of transfer, and since it is primarily the process of associating the visual symbol with its oral equivalent, there seems to be a need for the development of a coding system that permits the pupil to attack new words without having to learn a new configuration each time. The teaching of identification skills must make some provision for independence in word attack. The pupil who depends totally on configuration skills finds progress increasingly more difficult because his identification problems increase as new words are introduced more and more rapidly (p. 16).²⁴ Independence in reading does not seem possible without phonetic and structural analysis skills. *The ultimate goal is self-direction in the learning process.*

Phonics training seems to equip the pupil with *one* general coding system that fosters development in independence. There are others.

We have every right to expect our children to learn to read more words in the first and second grade than they at present are capable of reading. Studies^{46, 42} show that the oral recognition vocabulary of first grade children may be as high as 26,363 words. Certainly, in six years of listening and speaking the child has learned many more words than we at present seem to be teaching him to read. It seems reasonable to expect children to learn to read, in grades one and two, a greater percentage of those words that are a part of their speaking and listening vocabulary.

Perhaps, a few generalizations are apropos in closing this chapter. Most of these are not substantiated in the discussion, but rather reflect

our thinking and might serve as guidelines in general evaluation of reading methods.

1. Most children learn to read regardless of the method. Many different roads can and do eventually lead to reading proficiency.
2. There are methods or specific teaching approaches that make a world of difference for the individual child.
3. The method that works best for a given child depends on the individual child.
4. The "best" method for *most* children has both an analytical *and* a synthetic emphasis. There are few pure-configuration methods, and few programs ignore phonics completely.
5. Some teachers do not make use of the best that is available, but if the teacher is a good teacher, other factors often pale into insignificance.

What does good teaching include? In reading, good teaching seems to mean that the teacher devises techniques of instruction which help the pupil to construct a generic code or a coding system that has wider applicability in reading than would the rote identification of individual words. The code has wider application than in the situation in which it was learned. The child learns to "read off" from this generic code information that permits him to attack other words. Such learning maximizes the transfer of learning. The child, in a sense, is taught to be a better guesser by knowing the language system and the phonogram-phoneme interrelationships. Such teaching is concerned with the utility of learning: Whether, if the pupil has learned one thing, he will be able to handle other situations without additional learning; Whether, if he has learned to identify some words, he also has learned a system that helps him to identify other words (p. 67).⁵

Phonics is no longer a real issue in reading. All systematized approaches to reading teach phonics in one way or another. All approaches stress the importance of attaining meaning. Thus, all emphasize both an analytical and a synthetic approach.

However, there are differences as to the route to ultimate progress in reading. Should the earliest emphasis be on meaning or on word discrimination? * We have tried to show that this is a pseudo-question, that both are essential from the beginning. There must be a delicate balance between the two, lest the child be dragged too far afield in either. There must be a middle course between a complete discrimination approach in which pupils perhaps can recognize words but can't think with

* For a thorough discussion of this, see: Theodore L. Harris, "Some Issues in Beginning Reading Instruction," *Journal of Educational Research*, 56 (September 1962) 5-19.

the materials and a meaning approach in which children might be able to enjoy reading but can't recognize the words.³⁷

In the configuration approach the printed word is directly associated with an idea; in the word-discrimination approach greater emphasis is placed on the association of the printed word with the spoken word for which the child has a meaning. The first of these is a most suitable way for introducing reading. It seems that the second is essential to develop independence in reading.

The need for both approaches again seems indicated. Children need to see words as units, but they also need to pay attention to parts. We do not want to have children capable of reacting only to the whole, neither do we want them to become fixated on the parts.

The child, in this approach to reading, must be viewed as a learner capable of discrimination and generalization who can, with guidance, learn a generalized coding system which he can use in identifying numerous words not previously seen by him.

Questions for Discussion

1. Discuss: "The quickest way to the meaning of a word is through its sound."
2. What has been the historical, psychological, and experiential basis for the analytic or word method?
3. Discuss the validity of the word method in the light of newer research and new interpretations of previous research.
4. By examples, illustrate the difference between systematic meaning and referential meaning.
5. Discuss Bruner's thesis that the good reader must develop some sort of coding system which permits the pupil to achieve independence in attacking words.
6. Discuss: Children react to the perceptual whole but this may be the total word or only a specific characteristic of that word such as an ascending letter.
7. Discuss the pros and cons of the question: Do children from infancy perceive the world in the fully articulated way that adults do?
8. Discuss the argument that children are not really being taught to read with meaning. The books contain words and concepts which are so simple that the child can't do anything but understand. How can one teach understanding if there is nothing left to understand?
9. Discuss: Using the context to guess an unknown word may be a harmful technique.
10. Discuss: Is the child characteristically reacting to the whole word or is he latching on to some particular element? Is there some justification for assuming that the pupil's response implies no more than the minimum of knowledge to reproduce it?
11. Discuss: Letters have meaning. The letter gives instructions to the voice muscles and the order of the letters in words lets the reader know in what order the instructions are to be carried out.

Basic Principles

1. The quickest and most economical way to the meaning of the printed word generally is through its sound.
2. The appropriate method for associating meaning with a visual symbol is not necessarily the appropriate method for teaching word identification.
3. The unit of meaning and of recognition may not be the unit of identification.
4. To say that a word is "meaningful" is not the same as saying that it has meaning.
5. The basic pattern or Gestalt in language is the phoneme-phonogram inter-relationship rather than the size or shape of the word.
6. The perceptual whole is a relative term, dependent for its formation upon the ability, experience, purposes, maturation, perceptual skill, and learning habits of the learner.
7. The good "identifier" of words learns a coding system based on the transitional probabilities that characterize letter sequences in English and that characterize the sound-print relationships of the language.
8. When words are learned as configurations and as the number of words learned increases, the possibility for errors in recognition also increases.
9. The basic identification skill is the "seeing" of the sound in the printed symbol.
10. The alphabet method of word recognition has a greater positive effect on spelling and writing than on reading.
11. Word attack training gives better results with the average pupil than with the bright pupil. (The bright pupil generally acquires word attack skills through his everyday reading experience.)
12. Poor readers make less application of their phonic skills to new words than do good readers.
13. The more a child's achievement has been lowered by lack of attention and concentration, the more helpful is the kinaesthetic method.
14. Pupils generally achieve significantly higher on a word recognition test when taught by a phonic method than when taught by a look-and-say method.
15. Reading essentially is the linking of written or printed symbols with experience.

9 INTRODUCING THE ELEMENTARY READING PROGRAM

The elementary reading program is a many-sided program. In this chapter we are concerned with the major aspects of this program. What constitutes a good program? What must be taught in such a program? What are its aims and objectives? What, in general, is the best way to introduce the pupil to actual reading?

Introducing the Pupil to Reading

The first grader has learned much about reading. He has looked at, heard, and used words.

When he begins first grade, he is asked to make a more formal and a more systematic attack on printed words. He must "look at the form [of the word], speak the pronunciation, and understand the meaning (p. 13)." * ¹⁹ He needs to identify the word, and in the course of his elementary school years will learn to attack the word through phonetic analysis, through the word's shape or configuration, through the use of contextual clues, picture clues, through structural clues, through syllabication, or by using the dictionary. He must learn that a printed word has a form, that it has a pronunciation, and that it has a meaning. Reading is a *see, say, and comprehend* process.

Children early note that words have specific shapes or configurations, that some are short and others are long, and that some have ascending letters and others have descending letters. This information is most useful. Shape identifies a word for the child.

As noted in the previous chapter, major teaching tasks still remain. Children must be taught to identify the word by "seeing mentally" the pronunciation of the word, and if they have not already done so, they

* Paul McKee, *The Teaching of Reading in the Elementary School*. (Boston: Houghton Mifflin Company, 1948). Reprinted by permission.

must learn that symbols have meaning or that they stand for something.

Children frequently cannot or do not make this latter inference. The teacher must constantly check upon the pupil, and when the association of meaning with the symbol is not made, he must call it to the pupil's attention.

Materials for the Beginning Reader

The beginning reading program is an extension of the child's readiness program. In the beginning program the child is formally introduced to reading materials, such as experience charts, preprimers, primers, first readers, tradebooks, magazines, and filmstrips.

THE EXPERIENCE CHART

Children have a natural inclination to want to talk about their experiences either as individuals or as groups. They may want to describe a mountain trip, the bottling of Coca Cola, the planting of a garden, or the harvesting of wheat. The teacher should use this language activity to introduce reading. He may write the description on the blackboard and eventually may transfer it to the tag-board. Later, especially in the upper grades, charts may be used to introduce old words in new contexts, to study rhyming, to develop creative thinking, to record classroom directions, to record steps in an experiment, or to summarize information.

Initially, however, the experience chart is a simple, meaningful, and highly motivating introduction to reading. The pupils report a common experience and the teacher prints it on the chalk board. The story or incident is changed by the teacher only when he needs to modify the vocabulary. The vocabulary normally is simple; the sentences are short; and three or four sentences complete the story.

The steps in making an experience chart are usually the following:

1. Provide for commonality of experience.
2. Have children discuss their experiences.
3. Record on the blackboard the key ideas.
4. Have children read the chart as a whole.
5. Isolate parts of the chart for specific emphasis.
6. Have children read again the chart as a whole.
7. Make a file of experience charts and label them "Our Big Book."
8. Have the children read the stories occasionally.

The child comes to school with a well-developed speaking language. This language reflects his home background and may deviate somewhat from the language he will be taught in school. Experience charts allow for a gradual transition to the formalized language in books. Moving

from the known (child's spoken language) to the unknown (the written language) is good educational procedure and experience charts make this possible. They provide the pupil with his own model of sentence patterns and with experiences with which he is familiar.

Developing experience charts also teaches the child the natural relationships between the language arts (p. 263).²⁸ He already has learned that what he can think he can say. Now he learns that what can be said can be written and what can be written can be read. The child learns that sounds can be put into written form and that the beginning sounds, middle sounds, and ending sounds can be graphically symbolized.

BASAL READING MATERIALS

Although most teachers use experience charts of one form or another, few have thought of them as comprising the total reading fare. The need for sequential development in reading skills is difficult to satisfy by their use alone. Most children profit greatly from a steady progression through graded materials.

Such graded materials have come to be known as basal reading materials. They are designed to provide continuity in reading development and to provide training in *all* the basic reading skills. They aim at systematic instruction.

It would seem that an adequate reading program must include teaching of the basic skills, must provide suitable materials to teach the skills, and should provide the proper reading content (p. 171).¹² Because of the latter aspect, basal reading programs have always encouraged the use of supplementary materials.

Two philosophies and/or procedures of using reading materials have developed through the years. One of these, perhaps the most prevalent in the past, emphasized the sequential nature of materials. All children were required to master the sequence of skills; only the speed of introduction and the level of difficulty were modified. The second approach assigns greater responsibility to the learner in determining the continuity of learning (p. 172).¹² This latter approach is today termed individualized reading. It makes the learner and his stage of development the major referents and relates instructional materials to them (p. 175).¹²

PREPRIMERS, PRIMERS, AND FIRST READERS

The first graded materials are usually the preprimers. These are extensions of the readiness materials and frequently contain stories with the

same characters as were met in the readiness materials. The vocabulary is simple (perhaps too simple) and is systematically repeated. Primers and first readers are extensions of the preprimers.

The McKee series^{*} contains three preprimers: *Tip, Tip and Mitten*, and *The Big Show*. These materials introduce the child to sixty words. *Tip* has five stories and twenty different words; *Tip and Mitten* has three stories and twenty-five new words; and *The Big Show* has three stories and fifteen new words.

The same series has one primer, *Jack and Janet*, consisting of eleven stories and ninety-one new words. The first reader, *Up and Away*, has ten stories and introduces 164 new words.

The *Basic Reading Abilities Series*† consists of two pre-primers, *Up and Down* and *Bing*, the primer, *Betty and Bobby*, and the first reader, *The Big Surprise*. The primer introduces ninety-five new words; the first reader introduces 159 words.

The New Basic Readers Series‡ has three pre-primers: *We Look and See*, *We Work and Play*, and *We Come and Go*. These introduce fifty-eight new words. The two primers, *Guess Who* and *Fun With Dick and Jane*, introduce 100 new words. And the first reader, *Our New Friends*, repeats previously introduced words.

The reading series mentioned above are only illustrative of the many other similar reading series.§ Each of the readers is usually accompanied by a workbook that leads the child step-by-step through a carefully developed program of instruction. The workbook introduces the vocabulary and provides the experiential background needed for successful reading. It provides the activities and practice necessary for the development of the basic skills.

Teacher manuals are provided to guide the teacher in his day-to-day and even minute-to-minute teaching. Unfortunately, these may work against good reading instruction. The teacher may become so reliant upon workbooks and teacher manuals that he falls imperceptibly into the lock-step that he would be the first to abhor.

Reeve²² analyzed the vocabulary of seven primary reading series (pre-primers, primers, and first readers) published by Scott, Foresman and Company, Macmillan, Ginn and Company, Houghton Mifflin Company, Holt, Rinehart and Winston, Harper and Row, and Allyn and Bacon. She found that 633 different words were introduced, 109 words were common to all the series, and 41 were common to 6 series.

^{*} *Reading for Meaning Series*, Houghton Mifflin Company, Boston.

† *Basic Reading Abilities Series*, Harcourt, Brace & World, Inc., New York.

‡ *The New Basic Readers*, Scott, Foresman & Company, Chicago.

§ See Chapter 14 for a more complete listing.

The following list of 109 words was common to all the series: *

a	did	here	may	run	too
all	do	him	me		toy
am	dog	his	mother	said	two
and		home	my	say	
are	eat	house		saw	up
at			night	see	
away	farm	I	no	she	want
	fast	in	not	so	was
back	for	is	now	some	we
be	from			something	went
big	fun	jump	of	stop	what
blue	funny	just	on		when
boat			one	thank	where
boy	get	know	out	that	white
but	go		over	the	who
	good	laugh		then	will
call		like	play	there	with
came	had	little	put	they	
can	happy	look		this	you
come	have		ran	three	your
could	help	make	red	time	
	her	man	ride	to	

The following list of 41 words was common to six of the series: *

about	day	has	many	rabbit	walk
again	down	how	Mr.		water
as	duck		must	soon	way
		it			were
baby	find		now	take	wish
ball		kitten		them	
birthday	girl		open	took	yellow
black	give	let		tree	yes
	good-by	long	party		
cow				us	

This study has a number of implications. The teacher who uses more than one reading series probably will want to concentrate on the above 150 words. They are considered "basic" and will be especially useful in group activities such as experience charts, word games, or word drills. The study also revealed that one series introduced only four words not found in any of the other series; another series introduced as many as sixty-four words not found in the other series. The teacher needs to know this if he is to encourage a gradual progression from easy to more difficult materials.

Another analysis (pp. 177-178) ¹² of twelve basal reading programs

* Olive R. Reeve, "The Vocabulary of Seven Primary Reading Series," *Elementary English*, 35 (April 1958) 237-239. Used with the permission of the National Council of Teachers of English.

revealed that the total vocabulary of preprimers and primers ranged from 121 to 189 words, that the total vocabulary for materials through sixth grade ranged from 3894 words to 4436, and that one new word was introduced at the rate of every 50 to 110 running words.

Recently, evaluations of basal reading series have emphasized the excessive vocabulary control that is exercised in writing them. The above studies give some credence to this charge. Is it necessary to repeat a word again and again?

In recent studies involving 412 children Gates⁹ found that third-grade children of average ability, as a result of previous experiences in word recognition and comprehension, have only slightly more difficulty with the "new" words that are introduced in fourth-grade basal readers than with words met previously in basal readers. In fact, the top 25 per cent of youngsters in the last half of the second grade had such an easy time with both third- and fourth-grade words that vocabulary control seemed of little value. Pupils of below-average ability had only slightly more difficulty with the "new" fourth-grade words than with those words met prior to the second half of grade three. Pupils apparently met most so-called "new" words in their supplementary reading or had developed a method for attacking them, perhaps a form of coding system that we discussed in the previous chapter.

The assumption of basal readers seems to be that children must learn completely within a short time each and every word that they meet. There seems to be no other reason for the constant repetition of words. However, we know that learning rarely results in total mastery. The child in his language learning certainly progresses quite differently. He may hear or say a word only a few times and even then there may be a long interval of time before he hears it again.

The principle of vocabulary control apparently used in basal materials may not be valid. Vocabulary control is more than simply limiting the number of words and their rate of introduction. Frequency of use is not a valid criterion either, and yet, these seem to be the primary criteria of control in the basal series.

Basal readers introduce the pupil to relatively few different words. However, he may meet numerous regular and irregular phoneme-phonogram relationships. One preprimer, for example, introduces the pupil to only twenty different words but in those twenty words the pupil meets the following: sixteen different consonants, the double consonant *ll* as in *call*, one beginning-consonant blend, the end-consonant blend *nd*, the combination *ck*, and the *z* sound of *s*; the short vowels *i*, *a*, *e*, and *o*; the long vowels *e*, *o*, and *i*; the vowel combinations *ay* and *ou*; the short *u* sound of *o*; the *ô* sound of *a* as in *ball*; the silent *e* preceded by a long *e* and *o* sound as in *mere* and *bone*; the long *i* sound in the combination *ind*; and the peculiar *e* sound in the word *the*.

Perhaps, a control of the phoneme-phonogram relationships, the internal structure of words, would be more desirable than control of the number of words, and would lead to more meaningful learning, to better transfer of learning from one situation to another, and to less interference with learning. The pupil needs to learn that parts of words are useful in attacking new words, and he cannot do so when he meets a novel phoneme-phonogram relationship in each new word. Introducing children in one short breath to the short sound of *o*, the long sound of *o*, the short *u* sound of *o*, and the combination *ome* pronounced *əm* (as in come) and *om* (as in home) will leave many pupils gasping for air.

Despite these inadequacies, and it seems that basal readers could be improved, the basal series have helped teacher after teacher to teach hundreds of pupils to read. From our frame of reference and in the light of the discussion in the previous chapter, they are perhaps most useful in the early stages of reading when the child is taught through a configuration approach. In the light of Gates' study,⁹ on the upper levels they may frequently be more useful in developing the pupil's comprehension skills than in actually teaching independence and self-direction in identification of words. This is not bad. It simply means that they must be supplemented by other materials and, in fact, usually are.

The teacher must adjust the materials to the pupil. No materials will fit all pupils in even one classroom. Some children learn more slowly and have greater difficulty in comprehending than others. Little is gained from meaningless repetition for all pupils when it leaves the bright child with the feeling that the teacher can make a story last, and last, and last. Nothing more is gained from rushing the slow learner through a series because the schedule calls for it.

Teaching Reading

Before discussing additional ways of introducing reading content to the child, let us examine the actual process of learning to read.

In some form or another reading in its earliest stages, such as of experience charts or preprimers, involves picture reading, association of sound with the total word, and use of context to get the meaning intended. We are in addition recommending that the child should from the beginning learn to name the letters, learn to write the letters, and learn to associate sound with the beginning consonant letter and the median vowel. The last three steps are necessary if the pupil is to attain independence in reading. Let us look at each of these steps.

PICTURE READING

In the preprimer, the child is introduced to picture reading. A picture

may accompany each thought unit, which at this level is a line of print. The picture gives clues to the meaning of the words and is the child's first attempt to use the context, even though picture context, to infer the word. The teacher points out that the picture is trying to tell the reader the same thing that the words convey. Probably too many pictures accompany most preprimer and primer materials. Reading perhaps too often becomes an exercise in picture reading rather than in identification and understanding of the word.

As the child looks at the picture of Tip and Tom, the teacher may point out the specific details in the picture. Pointing to the title of the story, he shows the pupil that this is a story about Tip and Tom and that the title tells him this. Then, making certain that the pupil is looking at the words he says: "This says: Tip and Tom."



Tip and Tom

ASSOCIATION OF SOUND WITH THE WHOLE WORD

The teacher next prints the word *Tom* on the chalk board. If the reading exercise is an experience chart, the words will already be on the blackboard and the pupils will "read" the whole chart. The teacher will point out key words, asking each pupil to look at the word and say "Tom." The teacher asks: "What does it say?" Later he may teach the child that what a word *says* is a clue to what it *means*. The child must learn that the sound of the word, if the meaning of the spoken word is known to him, is usually a clue to its meaning. The child should realize that printed words are talk written down and that he has spoken similar words and sentences time and time again.

Since the method of sounding recommended here is the analytical method of sounding¹³ or perhaps the linguistic method (p. 28),³ we begin with the whole word. It is hoped that the child will learn the

phonemes of the language and apply them in learning to identify new words by repeatedly hearing and "seeing" them in meaningful words. Key charts are made for every vowel and consonant sound and the pupil should refer to these when in doubt. For example, *bat* may be the key word for the initial *b* sound in words. The key words, since they frequently are accompanied by pictures, should be the only possible name for the picture.

The analytical or "whole-word" method of teaching sounding involves the following steps (p. 338):¹⁴

- a. Observing, identifying, and recognizing words as a whole.
- b. From the beginning identifying parts of words that give clues to the sound of words.
- c. Identifying the sounds in other words.
- d. Drawing some inferences from what has been learned and applying these generalizations in attacking new words.

As noted in the previous chapter, the distinction in actual practice between whole-word sounding and the configuration-recognition method of identifying words is not as great as it appears. Sounding whole words may be an optimum method for teaching the configuration of words. Many children, who have been taught to "look at the word," probably pay as much or more attention to the *sound* of the word than to its shape. Heilman (p. 106)*¹¹ notes that: "Those who have mastered the process of reading are likely to lose sight of the many factors which must mesh at a given moment if success in reading is to be achieved. It is much easier to describe how to teach reading than to state specifically how children *learn* this process."

USE OF THE VERBAL CONTEXT

The pupil also needs to learn that he can use the *context* to arrive at the pronunciation and the meaning of the word. This latter step must not be overlooked. The child should always ask: Does the word make sense in the sentence? What word would make sense in the sentence? The child thus fits the word into its environment and from it may get his first pronunciation clue.

Leary¹⁶ points out the value of teaching a word in context:

Train a child to anticipate probable meaning, to infer an unknown word from its total context, to skip a word and read on to derive its probable meaning, to check the context clue with the form of the word, to search the context for a description or explanation that will identify the

* Arthur W. Heilman, *Principles and Practices of Teaching Reading* (Columbus: Charles E. Merrill Books, Inc., 1961). Reprinted by permission.

word, and he will have acquired the most important single aid to word recognition. For, regardless of what word he perceives, if it doesn't "make sense" in its setting, his perception has been in error.*

Unfortunately, the context, especially in preprimers, primers, and first readers, frequently is not of much help. *Tom has a ball* gives little help in identifying the word *ball*. And *Nan bought the dog* gives little basis for inferring the word *bought*. It might be *sees*, *has*, or *liked*. Nevertheless, as the child advances in reading he must learn that when a word has more than one meaning only the context or the sentence structure may give the clue to the specific meaning intended.

In the beginning reading exercises, the teacher should be careful:

- (1) That context clues are not overemphasized.
- (2) That the reading exercise does not contain too many strange words.
- (3) That the child does not become frustrated in his attempts to unlock the word.

LEARNING THE NAMES OF THE LETTERS

The child gradually needs to learn the names of the letters of the alphabet. Most children come to school knowing some of them, but few know all of them. The teacher must systematically introduce the letters and teach their names. He may select the word "Tom" from an experience story. He asks the children to look at the word, "Tom," containing the separate letters *T*, *o*, *m*. The teacher explains the differences among the letters, uses letter cards to fixate the association between the letter form and its name, and introduces the child to the capital and the lower case letter.

The teacher may use various techniques for teaching the letters. The teacher may have cards containing a single capital or lower case letter; cards containing the same capital and lower case letter; and cards containing more than one letter. The latter requires the pupil to discriminate one letter from another letter. If the pupil has difficulty in discriminating one letter from another, as, for example, between *p* and *b*, the teacher may point out the peculiar characteristics of each letter. The stroke of *b* is above the line; that of *p* goes below the line. If the child cannot associate correctly the capital letter with the appropriate lower case letter, he must be drilled in this phase.

* Bernice E. Leary, "Developing Word Perception Skills in Middle and Upper Grades," *Current Problems in Reading Instruction* (Pittsburgh: University of Pittsburgh Press, 1950). Reprinted by permission.

THE MANUSCRIPT FORMATION OF THE LETTER

After the child has learned the name of the individual letter, he is ready to learn how to write the letter. Again, many children, especially those who have attended kindergarten, will have developed some proficiency in writing the letters. Others may not have written any letters or at least have no familiarity with the correct formation.

At present, manuscript, script, or printscript is the first mode of writing taught the child. It was introduced into this country in 1921 by Marjorie Wise. It consists of sansserif letters, that is, letters without ornamentation.

The chief reason for using manuscript writing is that the child is more ready for it. Manuscript writing is easier to acquire, is more simple, is more legible, and seems to have more transfer value than cursive writing. In manuscript writing the letters are not joined, and the form of the letters is like that met in reading. This permits the pupil to compare what he writes with what he reads. Children don't experience as much difficulty with the straight vertical lines, circles, and part circles used in manuscript writing as with the more complex forms used in cursive writing.

ASSOCIATION OF SOUND WITH THE BEGINNING
CONSONANT AND MEDIAL VOWEL LETTER

Finally, the pupil must learn to associate a sound with the letter that he can name and perhaps write. It is important that he hear the sound in the natural context of the word. *T* is not a *tuh* sound. It has a distinct sound as a part of the word *Tom*. This phase is described at length in Chapters 10 and 11 and is perhaps most necessary in acquiring independence in reading.

Group vs. Individualized Instruction

Reading method always functions in the context of a specific type of classroom organization. Either the classroom is organized on a group basis with some attempt at individualization, or individualized instruction is emphasized and groups are formed as needed.

Historically classrooms have been organized into groups and the emphasis has been upon the development of a group organization that would permit the greatest amount of individual growth.

Unfortunately, the search for a happy balance between grouping and individualization is still in progress.

In the 1880's educators were already complaining about the lock-step

in reading education. The complaint was that all pupils were forced to advance along a common front at the same rate of speed. Each child had the same book, was asked to learn the same material, and was judged by the same academic standards.

ABILITY GROUPING

With the increased emphasis on individual differences in the 1920's and with the publication of the Twenty-fourth Yearbook of the National Society for the Study of Education, entitled *Adapting the School to Individual Differences*, came a new classroom organization. It was termed ability grouping and for some time was thought to be the answer to the problem. In this approach pupils of the same ability used the same basic reader and it was assumed that their individual needs were being met. Group purposes for reading were emphasized, but individual purposes were not ignored. The story read was discussed by the group. Much emphasis was put on sequential development in word-attack and comprehension skills, frequently through systematized study of workbook exercises or other teacher-directed activities. Independent reading was encouraged, but perhaps not systematically planned by many teachers.

Unfortunately, pupils commonly were divided into three groups, the average, above average, and below average. The child rarely was able to move from one level to another. In such a school setting reading ability labelled the whole child and frequently was considered to be a unitary trait which a child has or doesn't have, rather than a combination of abilities, some of which a child possesses to a greater or a lesser degree.

INDIVIDUALIZED READING

In an attempt to overcome some of the inadequacies of ability grouping there is today a tremendous interest in individualized reading.

It is suggested that the child *seeks* for what he is physiologically and psychologically ready, and that he shows his readiness through the spontaneous *selection* of the materials that he wants to read.

Self-selection is considered to be a necessary aspect of this program. Teachers have always encouraged the child to explore reading materials apart from those that he used in the classroom. Perhaps, in individualized reading, the pupil is encouraged to take a more active part in the selection of the materials.

The advantages claimed for individualized reading are many. Pupils seem to be more interested in reading. They read more at home. They show more interest in improvement and develop more favorable attitudes

toward school in general. They seem to engage in more independent thinking and show better self-management.

In individualized reading, ability groupings generally are replaced by flexible subgroupings or by their total lack. The child seeks his own area of reading and proceeds in that area unhampered by the individuality of other pupils or by the single basal reader. He reads tradebooks, basal readers, magazines, and newspapers.

The purposes for reading are primarily individual and only secondarily group. The group serves as a sounding board for the individual to test the accuracy of the ideas acquired and to permit him the luxury of sharing the knowledge and insight that he has acquired.

The teacher in individualized reading thus works with the individual, detecting his needs and providing for these needs as the pupil's work reveals them. He keeps an accurate record of the pupil's accomplishments and inadequacies and helps him to pace his activities in accordance with his interests, aptitudes, and previous achievements. The teacher is not the prime director of the learning process and indeed never has been. Teaching may be a group process, but learning has always been an individual process.

Although evaluations of individualized reading are limited, experience has shown that rarely is a program, method, or technique fully adequate. Individualized reading does not seem suitable for pupils who cannot work independently or who cannot select or pace themselves wisely, and it is not economical when instruction can be provided more simply and in less time in a group situation than in a one-to-one teacher-pupil conference. And skills are not learned simply by reading. The poor reader does not become a good reader by selecting and reading materials that he enjoys. Practice of itself is not enough.

THE NEED FOR ECLECTICISM IN CLASSROOM ORGANIZATION

In *Psychology in Teaching Reading* (pp. 383-389)²⁵ the principles that should guide classroom groupings were outlined. It was pointed out that total homogeneous groups are never possible, and that when formed groupings should be related to the specific learning task. Groups are occasioned when pupils show a commonality of achievement, interest, or need. Children may be grouped to help each other in a learning activity. They may be grouped when they show the need for the same skill development.

Obviously, class organization is only one phase of the total reading program. To group heterogeneously, homogeneously, or individually is not the total answer.

The good basal program has always had some aspects of the individ-

ualized program, and the individualized program does not eliminate all group aspects. If indeed we do believe in the individuality of the learner, then it is difficult to ignore either approach, for one child may learn better in group situations, another in independent study. And even the same child may learn better when shifting from one approach to another as the occasion and his own needs demand.

Total individualization of instruction thus may not be individualizing the reading program. For some children it may be an inappropriate organization. Individualization really means that the teacher accommodates the situation to the child and not the child to the situation. He does not force him entirely either into a group structure, nor into an individualized, one-to-one, pupil-teacher structure. We now realize that both individualized and group instruction are good for something and that one of them alone is not good for everything (p. 15).¹⁸ Some types of learning may best be obtained through individualized instruction; others, through group instruction. Groups of five may be best for discussion purposes; groups of two or three may be better for practice exercises;²⁰ and the teacher may best be able to test the pupil's comprehension of what he read individually.

Thus, the teacher's role ultimately is determined by the situation in which he finds himself. Sometimes he must become quite directive and sometimes he functions best in a permissive, laissez-faire role. He moves between the two extremes, neither advocating a "just-let-them-read" point of view, nor limiting all the child's reading to the basal reader. He avoids both the "turn-them-loose, permissive" approach and the "stick-strictly-to-the-textbook" approach.²

The instructional procedures must be altered to accommodate individuals within the group and not the group itself. It may even happen that occasionally children within a given group are achieving on a third-grade reading level. This does not remove the differentiated need of each pupil for special training in word analysis or concept development. "Taking the child where he is" does not simply mean selecting materials on his grade level. Emphasis must be placed on his specific needs.¹⁴

Individualized reading and grouping are not incompatible. A teacher-child conference is a group. Sometimes, the teacher will have three, five, or as many as eight youngsters about him. All in the group may need help in the same reading skills, may want to discuss the same story, or may want to read aloud to each other. Children may be grouped on an interest basis, need basis, or for social reasons. Some children learn better with a friend. A study by Bradley⁴ indicates that children worked better in pairs than under the direction of a teacher or when working alone.

It is even possible to have ability grouping and to individualize instruction in each of the subgroups. It is even desirable to subgroup within ability groupings and to individualize instruction in each of them.

When pupils work on experience charts, they may work in groups. When beginning sounds are taught, initial instruction may begin on a class basis. Education cannot become so individual that socialization is ignored. The child is by nature individual; with learning he becomes a social animal. The pupil whose reading experiences are limited to one-to-one sessions with his teacher or who reads always alone is missing an important part of education, perhaps even of reading education (p. 15).¹⁸

There are even occasions when the entire class can and should work together. There *never* is and never has been justification for "total class teaching of reading (p. 97)." ³³

Mobile groups based on constantly changing objectives and the needs of the children imply a constant awareness of the individuality of the learner. It is possible that the best and the poorest reader will be in the same group. Both may need help in a specific reading skill. Flexible groups thus are ever-changing and make the attainment of immediate objectives that are consistent with immediate needs possible.¹⁵

The basal reading program has been identified with group instruction. Today, the easiest study to find is one expounding the strengths of either the basal or individualized approach. Each has its defenders and its antagonists. Unfortunately, many of these studies either do not control teacher competence, pupil abilities, and teacher-pupil motivations or they compare a poor "basal" program with a good individualized approach or a poor individualized approach with a good basal program.

Good teachers, even when they use a basal approach, do not slavishly use only basal materials. They do not require all children to read in the same place in the basal reader. They do not require each child to read the same books. They do not restrict children's supplementary reading, nor do they indiscriminately ignore children's readiness and abilities, grouping them into a "reading circle" where each child takes his turn at reading the same book, and, they do not ignore individualization of instruction.

On the other hand, individualized reading does *not* exclude groupings, the use of graded basal readers, or the sequential development of word and comprehension skills. It does not claim to be the panacea that will solve all reading problems. It does not permit children to choose whatever they want to read or, indeed, whether they want to learn or not to learn. It does not let children use trial and error methods, which can introduce only wrong solutions that later will be difficult to eradicate. It does not ignore the need for frequent presentation of certain materials.

The Developmental Reading Program has little quarrel with attempts to individualize the reading program. It does insist that principles of child development should guide the methods and procedures used. With this in mind, let us make a few suggestions:

1. The pupil should learn to select materials that have interest value and that meet the demands of readability. The teacher should keep a card on each book, questions to test the pupil's comprehension, numbers of pages that have material suitable for oral reading, and a list of the vocabulary.
2. The reading program should make provision for the progressive development of skills. Certainly, the basal program is a great asset here. Children may make their selections from a teacher-preselected list of books. Each such shelf of books might contain one basic reader that the child must read prior to going on to other books.
3. The effectiveness of the program depends on the number and quality of reading materials. There is a need for many basal and supplementary readers, magazines, and tradebooks on all levels of instruction. As important is the teacher's familiarity with the content and reading difficulty of the books.

No reading program is complete that does not provide the opportunity for the child to move beyond the basal materials. Children need to read enjoyable literary material. They need to experience poetry and prose; they need to read animal stories, fiction, folk tales, and fairy tales. The basal program requires development in comprehension, word analysis, and vocabulary. The literature program provides skill in following the sequence of events in a story, in predicting outcomes, in distinguishing between the real and the fanciful, and in reading between the lines. The well-balanced program lets children explore their literary heritage. It extends their horizons, stimulates their imagination, fuels their intellect, and whets their interest.

Today's reading program cannot afford to ignore the values of either the group approach, whether in a basal or other program, or the individualized approach. The good teacher will vary his approach from child to child and from day to day and from hour to hour. It is not necessary to assume that using basal readers excludes individualization, nor that individualization must omit sequential skill development. Both grouping and individualization have something to contribute to the reading program.

The Primary Program

The primary reading program extends usually through the first three grades of school. Because of the composition of the grades, a beginning reader may be learning what some other reader will learn only towards the very end of the primary years.

Primary reading is concerned most with initiating the pupil to the basic reading skills. During this period the pupil normally learns to read. He

expands his sight vocabulary and becomes increasingly proficient in attacking new words. He becomes versed in structural and phonetic analysis.

His ability to deal with concepts and the meanings of words is similarly expanded. He learns new meanings for words and is introduced to figurative meanings. The pupil makes a beginning in mastering study skills and oral reading skills. He develops his reading habits, interests, and tastes. He reads for enjoyment as well as for learning purposes. He reads for information, interpretation, and appreciation.

Knowing what skills to teach is not enough for the teacher. He must decide what skills a specific child needs and can learn; he must know what method to use in teaching the skill; and he must be able to construct and use special projects that illustrate, organize, and develop the skills.

Since learning to read is such an individual process, it seems illogical to suggest that certain learnings are peculiar to first grade, second grade, or third grade. Skill development does not come in capsule form. One cannot dish out to third graders the third-grade capsule and to fourth graders the fourth-grade capsule. It would seem more logical to identify the sequence, if indeed there is any, in which the skills are to be introduced and then to identify the level at which the pupil is performing. Only in this way can the teacher provide for each one's needs.

Thus we will postpone an outline of the reading skills for the elementary years until we discuss the intermediate reading program. There is justification for this. All teachers in the elementary grades should be familiar with the *total* reading program. Each teacher should appreciate its continuity. He should know at what level the pupil is working, what he has learned, and what he probably needs to learn. Introduction of reading skills is useless unless the child's subsequent reading experiences serve to maintain those skills.³⁵

THE GENERAL READING SKILLS

It is not possible to determine precisely when a child learns to read, when he reads to learn, or when he develops an appreciation and taste for reading. Although the goals of teaching reading are constantly changing, every significant reading skill has its beginning in the earliest school years. The kindergarten youngster learns to appreciate, to evaluate, to organize, to think critically, to draw inferences, to apply ideas, and to follow directions (p. 94).²⁷ Thus there is some value in listing the general reading skills.

Unfortunately, the most uncertain and yet the most needed information about reading today is the precise meaning of "reading skill."

What are reading skills? Are all reading skills specific or is there a general underlying skill?

After an intensive analysis of the research, Lennon¹⁷ suggests that there are perhaps no more than five or six basic or general reading skills. He emphasizes four.

The first component of reading ability may be a "verbal factor." Reading requires the ability to know words and their meanings.

Reading also requires the ability to comprehend the literal meaning. This may include such "specific" skills as following directions.

The good reader also has the ability to comprehend the implied meaning of a paragraph. This may be analogous to interpretative reading and includes all those reading skills requiring the pupil to reason with the material. The ability to detect the main idea, to draw inferences, to predict outcomes, to interpret the context, and to understand the writer's organization would be classified under this heading.

The fourth general reading skill might be termed "appreciative reading skill" and would include the ability to detect the author's mood and purpose and the tone of the article.

Other writers speak of a "perceptual factor" and a rate factor. We would add oral reading skills. In general, then, reading skills may be divided into the following seven broad areas:

1. Perceptual Skills
2. Literal Comprehension Skills
3. Word Recognition Skills
4. Interpretative and Appreciative Skills
5. Reading-Study Skills
6. Rate of Comprehension Skills
7. Oral-Reading Skills

In our list of the specific skills later in this chapter we depart somewhat from Lennon's classification. Perhaps, this should not be a major concern. Obviously reading abilities greatly overlap, and thus attempts to improve a specific ability are accompanied by improvements in other areas.

The Intermediate Reading Program

Although in the intermediate grades most emphasis is put on "reading for learning," many pupils have not yet acquired the reading skills needed to do this. Thus, for some pupils this period is actually a continuation in the basic skills program. They need to learn the more advanced basic reading skills. The child who is deficient in the basic reading skills does not improve his reading by reading more. Such reading only reinforces his faulty habits. He needs guidance in reading skill development.

For others, the intermediate grades are a period of refinement. They learn how to use the context to glean from it the one specific meaning intended. They learn to read critically. Their vocabularies expand rapidly so they can digest newspapers, magazines, and the many textbooks that they now encounter. They develop lasting reading interests and tastes, and appreciation for prose, poetry, and drama.

Because there is a great emphasis on textbooks which require high-level reading ability and proficiency in reading-study skills, the pupil needs to handle many more reading tasks. The sentence structure becomes more difficult; new and more difficult meanings for words are required; and idiomatic and figurative expressions must be handled. The amount of reading greatly increases, requiring the pupil to read at a more rapid pace. The reading demands of the intermediate grades call for flexibility in approach. The pupil must learn to gauge his rate and even his accuracy of comprehension to many different purposes for reading.

The elementary school pupil reads for various purposes. He may read for an over-all view, for main ideas, or to note details. On more advanced levels he may read to solve problems, to understand the organization, or to appreciate literary form.

BASIC READING SKILLS

In the learning of basic skills there obviously are differences among children in *rate* of learning. The differences in learning *capacity* are just as significant. Some children may never master all the skills. This again reinforces the need for individualization of each pupil's reading program. The teacher must start the child at the point of success that he has attained and must permit him to advance as far as he can as rapidly as he can.

Let us list the skills that the child should learn during his primary and/or intermediate years:

1. Perception Skills

- a. Visual perception of form
- b. Visual perception of capital and lower-case letters and words
- c. Auditory perception of sounds
- d. Recognition of rhyming words
- e. Ability to move eyes from left to right and make accurate return sweeps
- f. Increased eye span

2. Comprehension Skills

- a. Matching words with pictures
- b. Associating meaning with word symbols
- c. Inferring meanings from context clues
- d. Inferring meanings from word clues—roots, suffixes, prefixes, compounds
- e. Matching words with definitions

- f. Recognizing antonyms and synonyms
- g. Associating printed word symbols with other symbols such as:
 - 1. musical notes, clef, sharp, flat, rest,
 - 2. mathematical signs—plus, minus, half-dollar, cent, circle, triangle
 - 3. maps, charts, graphs
 - 4. diacritical marks in the dictionary
- h. Developing meaning for ever larger units of language: sentences, paragraphs, etc.
 - i. Finding main ideas in paragraphs
 - j. Recognizing and organizing facts and details
 - k. Ability to recognize literary form
 - l. Ability to detect the writer's purpose
- 3. Word Attack Skills:
 - a. Using word configuration clues
 - b. Using contextual clues
 - c. Learning structural analysis clues
 - 1. inflectional endings
 - 2. words ending in *ing*
 - 3. doubling the consonant before adding *ing*
 - 4. compound words
 - 5. prefixes and suffixes
 - 6. the apostrophe *s*
 - 7. the past tense with *ed*
 - 8. the plural with *es*
 - 9. the contractions
 - 10. syllabication
 - d. Learning phonic skills (see chapters 10 and 11)
- 4. Reading Study Skills
 - a. Dictionary skills
 - 1. definition—Select correct meaning that fits the context
 - 2. alphabetizing
 - 3. syllabication
 - 4. accent and guide words
 - 5. use of the thumb index
 - 6. pronunciation key
 - 7. diacritical marks
 - b. Location and reference skills—use of encyclopedias, almanacs, magazines, card catalogues, etc.
 - 1. locating specific information in a textbook
 - 2. locating material in the index
 - 3. ability to interpret cross references and to use the table of contents, glossary, and footnotes
 - c. Use of maps, charts, tables, and footnotes
 - d. Use of library resources: card catalogue, indexes
 - e. Organization skills
 - 1. selecting main ideas
 - 2. ability to follow directions
 - 3. arranging events and items in sequence
 - 4. putting together ideas from various sources
 - 5. summarizing
 - 6. outlining

7. note taking
 8. ability to retain and apply what has been read
 9. ability to use study-methods, such as the SQRRR method—surveying, questioning, reading, recitation, review
 10. ability to read in specific content-areas
5. Interpretative and Appreciative Skills
- a. Evaluate what is read
 - b. Predict outcomes
 - c. Perceive relationships or comparisons
 - d. Suspend judgment
 - e. Draw inferences and conclusions
 - f. Deal with figurative and picturesque language
 - g. Detect bias
 - h. Detect author's mood and purpose
 - i. Filter facts
 - j. Differentiate between fact and opinion
 - k. Weigh facts as to their importance
 - l. Analyze opinions
6. Rate of Comprehension Skills
- a. Left-to-right eye movements
 - b. Reduction of regressions
 - c. Phrase reading
 - d. Reduction of vocalization
 - e. Ability to choose an appropriate reading technique—flexibility
 - f. Scan for specific information
 - g. Skimming skills
7. Oral Reading Skills
- a. Keep eye ahead of voice
 - b. Enunciate clearly
 - c. Pronounce correctly
 - d. Read in thought units
 - e. Vary pitch and volume of voice
 - f. Adapt voice to size of room and audience

RATE SKILLS

We single out rate skills for detailed discussion here because all the other reading skills to be developed in the elementary school have been discussed or will be discussed in subsequent chapters. Perception skills are discussed in Chapters 2 and 7, meaning skills in Chapter 12, word attack skills in Chapters 10 and 11, study skills, interpretative skills, and purposive reading in Chapter 13, and oral reading skills in Chapter 2.

In a previous article^{5*} the author pointed out that rate of reading

* Emerald Dechant, "Rate of Comprehension—Needed Research," in *Changing Concepts of Reading Instruction*, ed. by J. Allen Figurel, International Reading Association Conference Proceedings, 6 Scholastic Magazines, New York, (1961). Used by permission. This article has been frequently quoted or paraphrased in this section.

frequently has been described as rate of comprehension. Perhaps it is better described as speed in grasping the meanings intended by the writer. To read is to comprehend, but one may comprehend at a slow rate or at a relatively more rapid rate.

Thus, rapidity in reading has value in its own right and should be investigated as a separate skill. It is an important asset. There are fast readers, average readers, and slow readers and it seems more desirable to be a rapid reader than a slow reader. It is a waste of time to maintain a constant pace whether a person understands what he is reading or whether he doesn't.

The superior reader supposedly pushes his eyes across the page as rapidly as his comprehension permits. This may or may not be good. No one can work at top efficiency all the time and there is no great necessity in even wanting to. There really is little advantage in rapidly proceeding through a newspaper if, after the reader has finished, he doesn't know what to do with his time. The proofreader gets better results if he is completely accurate the first time than if, because of too much speed, he has to reread the materials.

Thus slow reading is not necessarily poor reading. It affords the reader an opportunity to evaluate, to linger, to enjoy the beauty of the description (much as the traveler who stops to see points of scenic interest), and to read between the lines. At times, slowness is beauty. To read slowly, to think critically, and to feel deeply may be true enrichment.

That many readers read much more slowly than they could is an obvious fact. That others read as rapidly as their comprehension abilities allow may also be true. And for these, rate improvement training is of little value.

Fast readers and slow readers may or may not comprehend well, but sometimes the fast reader comprehends better than the slow reader. This happens when the fast reader is reading approximately as rapidly as his comprehension abilities allow and when the slow reader is reading more slowly than his comprehension permits, thus allowing time for the mind to wander from the task.

Rate of reading, of course, is not the ultimate goal in reading. The ultimate aim is comprehension according to one's abilities and needs. This means that the good reader is a flexible reader.* Just as cars have in them the power to go slowly or to go rapidly as the occasion demands, so also the good reader can slow down or speed up as the nature of the material and his own needs change. He can shift gears in reading.

Rate of reading should always be dependent on the purposes, intelligence, and experience of the reader and upon the difficulty level of

* The *Reading Versatility Test* by Arthur S. McDonald, Marquette University, measures flexibility of reading. It is designed for pupils in the fifth through the ninth grade.

the material. The rate is always dependent on the reader's motivation and his psychological and physical state, his mastery of the basic reading skills, and the format of the materials.

Efficiency in reading means simply this; with some purposes and some materials one should read slowly; with others, one should read more rapidly.

It makes little sense to prod along at a snail's pace if one can read rapidly and still understand the materials. If the reader cannot understand what he is reading, then a slower rate is called for. The good driver slows down his car in snow, on ice, around curves, in city traffic, and whenever he is not sure of the conditions of the road. He thus transmits more power to the wheels while at the same time going slowly enough so that he can view the entire situation carefully. The good reader slows down whenever he needs to do so to understand what he is reading. When he doesn't understand, he is in as much trouble as is the driver whose car is stuck in mud. It may be necessary to slow down to a crawl so that he can use more of his thinking power.

The reader gets into trouble in reading and must read more slowly when the writer's style is too difficult; when the ideas are too abstract; when he is trying to learn and to remember what he is reading; when he is following directions such as the carrying out of an experiment; when he is reading poetry; when he is reading critically—trying to evaluate what he reads; and when he reads such specialized materials as science.

It is interesting to note that when the good reader reduces his speed, he does so for a purpose. It does not create a gap between his reading rate and thinking rate. He reduces his speed because the materials require him to think more slowly. The good reader seeks to increase his understanding without sacrificing speed unnecessarily, or he may want to increase his speed without sacrificing his understanding. In short, he is a flexible reader. The flexible reader gears his reading rate to his thinking rate.

Rate improvement cannot be built on inadequate word identification and word recognition skills. It cannot be built on an experimental background that keeps the reader from understanding what he is reading. It cannot be built upon immaturity in intellectual development.

On the other hand, there is little doubt that rate of comprehension can be improved. Students on the high school and college level and adults who have undertaken some form of rate improvement training do increase their speed and generally will read faster than those who have not had such training.

Advocates of rate improvement programs claim that such programs also may lead to increased accuracy in perception, more accurate and more rapid visual discrimination, wider span of apprehension, better

attention and concentration, shorter reaction time, fewer regressions, a decrease in the number and duration of fixations, reduction of vocalization, better comprehension, and general improvement in perceptual skills.

Unfortunately there are many unanswered questions. How to increase reading speeds, whether rate improvement programs are desirable in the elementary school, and whether present methods are suitable are still debatable questions. Is there any value in speeding up eye movements? What are the transfer effects of speed programs? In some programs the pupil is taught rhythmic phraseology. Yet, the good reader is a flexible reader. Normal reading is continuous textual and nonrhythmic reading.

There are also many related questions that constantly perplex the practitioner. For example: What are effective tests of rate of comprehension? What is optimal reading speed on specific materials and how can it be determined? It is generally recommended that the rate of reading approximate the student's thinking rate. What is this? Which rate skills should receive most reinforcement?

Finally, what is the pupil learning in rate improvement programs using tachistoscopic and/or other mechanical devices? * Fletcher⁸ found that when three equivalent forms are used in testing the pupil's performance, at the end of the first, second, and last tachistoscopic training session, most of the gains are found to occur between the first and second session. The technique of rapid performance on a tachistoscope seems to be acquired rather quickly.

What implications do all the data about reading rate have for the elementary reading program?

There is little justification for emphasis on speed of reading in the primary school years. The intermediate pupil on the other hand must be taught to adjust his reading speed to the materials and his purposes for reading. He must be taught, either through book or machine programs, facility and speed in perceiving words and relating them to their meaning. He must be taught to read in thought units. He must be helped to overcome faulty habits such as moving his lips, pointing to words, or moving the head while reading.

The pupil must be encouraged to move his eyes as rapidly across the line of print as is possible. Too frequently, the pupil can read faster but he has developed the habit of moving slowly. To overcome this habit the pupil should time himself on passages of a particular length. In the beginning the passages should be simple and interesting. If the print is in narrow columns, as in newspapers, the pupil should be encouraged to make only one fixation per line, forcing himself to move the eyes down the page.

* In Chapter 14 various mechanical devices are discussed and evaluated.

The pupil is constantly tempted to regress so that he can read more accurately. Normally this may be good procedure, but it does not lead to increased speed. The pupil must fight against this. He can be helped to overcome excessive caution by cutting a slot out of a piece of paper and moving the paper down the page. This forces him to move ahead and keeps him from looking back or too far ahead. Another device consists simply of a sheet of paper which he may move down the page, covering a line at a time.

The pupil must learn that there is no best rate of reading. The good reader uses a flexible approach in reading. His reading should vary in speed from very slow, to moderate, to very fast; from detailed analysis of what he reads to skimming and scanning. Even his comprehension should be flexible. Some materials need to be understood thoroughly; others, only generally. Certain parts of a textbook must be read intensively; others may be skimmed. The flexible reader may read very rapidly or even skip those parts that are trivial, already known, or that have no bearing upon his goals and purposes.

The flexible reader knows what he wants from the material. He has asked himself: Need I to understand only the main idea, the supporting facts, or a combination of these? Am I reading for pleasure or for information? What is my purpose?

The flexible reader also has developed a flexible attitude towards reading. He realizes that different reading situations call for different ways of reading. He reads differently when reading newspapers, magazines, advertisements, encyclopedias, textbooks, novels, how-to-do-it books, and editorials.

It is not enough to know what to do. The pupil also needs to know what is meant by flexibility in reading. Exercises like the following may help to convey this.

Exercise I

This lesson is on flexibility in reading. How should you read the following? Which would you read most rapidly? Most slowly? Try to arrange the exercises in an order of increasing speed.

1. Changing a mixed number to an improper fraction

To change a mixed number ($3\frac{1}{2}$) to an improper fraction (value is one or more than one) multiply the whole number by the denominator of the fraction and add the numerator of the fraction to this product. The sum of the product and the numerator is then written over the denominator.

2. Johansson-Patterson Fight

With barely a minute gone the challenger Ingemar Johansson unleashed a right that sent Patterson helplessly toward the floor. Patterson recovered quickly but in another twenty seconds he again was sprawled on the canvas. Again Patterson rose. Suddenly, Patterson's left landed on the jaw of

the challenger. Down went Johansson with a thud. History had been made in the first round of the fight. Three knockdowns and still no knockout.

It is obvious that the speed of reading these short paragraphs will change depending on one's purposes and one's familiarity with the material. One would read them more slowly if it was necessary to know every little detail; one would read them more rapidly, if one needed only general information. Thus, knowing why one is reading them is of first importance.

Similar exercises on the pupil's level can be developed to teach the various rate skills. The following are examples of such exercises:

1. Have the pupil read simple materials as rapidly as he can.
2. Have pupils time their reading of an article whose number of words they know.
3. Have the pupil skim a page in a textbook to find the answer to a question, to locate a new word, or to identify a quotation.
4. Have the pupil skim an encyclopedia article for a specific fact.
5. Have pupils determine purposes for reading and then discuss appropriateness of various rates for various reading purposes.

The aim of these exercises is not the development of an absolute reading rate. The pupil should develop an attitude favorable to reading at the rate that his comprehension and the nature of the materials allow. He should become unfavorably disposed to needlessly slow reading.

Diagnosis of the Pupil's Strengths and Weaknesses

No reading program is complete without diagnosis. Every child has a right to continuous diagnosis. Teachers should know what the child's present level of achievement is and to what level he may progress.

Both the pupil's oral and silent reading skills need constant evaluation. Does the child's oral reading indicate deficiencies in sight vocabulary, structural or phonetic analysis, in comprehension, in eye-voice span, phrasing, or inflection? In his silent reading does he follow instructions, read for meaning, and use the context to determine the meaning of a story? Does he hear and see likenesses and differences in letters and words? Does the child learn best through the visual, phonic, kinaesthetic, or a combination method?

Smith and Dechant (p. 408) ⁵ point out that

Diagnostic procedure begins with a study of the child's instructional needs based on the expectancies of his chronological age, mental age, and grade placement. We seek to discover why he reads as he does, what he can read, and what he does read successfully. We need to know if he is having problems in reading and, if so, what they are and what are their causes. We wish to know his general abilities and his reading potentiality and we must identify causal factors that have retarded his read-

ing development. In short, we must know his strengths and his weaknesses.*

It is a known fact that as children advance through the grades individual differences continue to increase. Pupils are more variable in interests, motivations, abilities, and aptitudes. On the sixth-grade level, for example, there may be as many as ten different grades represented. This calls for the application of some basic psychological principles. The teacher must adapt his instructional technique and materials to each pupil's level. This is not possible without a careful and thorough diagnosis of each pupil's strengths and weaknesses. The teacher must identify the special needs of every pupil. He must begin *where the pupil is*, not where the curriculum guide suggests that sixth-grade learners on the average are.

RETARDATION

For proper diagnosis the teacher must understand two basic elements: the meaning of retardation and devices useful in detecting retardation.

Not all youngsters who are poor readers are retarded readers. Many children do not read up to their grade level simply because they do not have the mental and perceptual capacity to advance as rapidly as their classmates. Such children usually are called slow learners. If they are reading on their mental age level, remedial programs will benefit them little.

However, there are many pupils who could be reading better. Generally, if a primary youngster's reading ability is six to nine months below his mental age level, a diagnosis is called for. On the intermediate level a retardation of a year or more is indicative of reading problems that can be corrected.

It is not enough to identify a pupil's over-all deficiency. Each pupil presents a specific pattern of weakness that must be carefully analyzed. For example, the teacher must know whether the pupil is deficient in word-recognition skills and what these are or whether his weaknesses are in the understanding of what he is reading.

DIAGNOSTIC DEVICES

Psychology in Teaching Reading (pp. 408-426)²⁵ discusses basic principles of diagnosis, the purposes, inadequacies, and uses of tests, and informal evaluative procedures. Sometimes informal checks such as

* Henry P. Smith and Emerald V. Dechant, *Psychology in Teaching Reading*. © 1962, Prentice-Hall, Inc., p. 408.

teachers' observations, children's attitudes towards books, and children's reading habits are better indicators of the effectiveness of a reading program than are more formal measures. Here we will concentrate on two diagnostic devices: the various reading tests and informal check sheets or analysis charts.

READING TESTS

Reading tests are divided into survey tests, diagnostic tests, and tests designed to measure specific skills. The survey test generally measures vocabulary knowledge, comprehension of sentences or paragraphs, and perhaps rate of comprehension. It gives a general picture of the pupil's strengths and deficiencies. It will indicate the grade level on which the pupil is reading and may be used to determine the level of difficulty of the reading materials that the pupil should be able to read. The diagnostic test measures specific strengths and weaknesses. It usually provides four or five subscores that are especially helpful in identifying specific needs.

Let us offer a few suggestions about testing and test interpretation:

1. Tests are designed solely for the purpose of understanding children better. Schools at one time got along without tests, but physicians also got along without X rays. "Liking children" is not a sufficient credential for effective and stimulating classroom teaching. The good teacher can understand children better by using tests.
2. Teachers cannot simply believe or not believe in tests. Tests are not articles of faith. Tests should provide an objective situation for studying a sample of the child's behavior. They are useful only if they are interpreted correctly.
3. Tests do not measure something fixed and immutable that characterizes the pupil for all time. They measure how well the pupil performs certain tasks at a given point in time. No test score can determine with complete accuracy what the pupil can or cannot learn in the future.
4. When achievement scores do not measure up to ability or aptitude scores, it is not always correct to assume that the pupil is lazy or uninterested.
5. Differences depicted on profiles do not necessarily identify genuine areas of strengths and weaknesses. The tests may not be comparable or the subscores on a single test may not be equally reliable.
6. Tests do not give answers to problems. They are designed to give additional information on the basis of which the teacher can come to wiser decisions.
7. Test scores frequently have a direct bearing on the self-concept

of the pupil. If the test results, for example, place him in an inferior position with other members of his family or close friends, he may feel threatened by the results.⁷ If intellectual recognition of his limitations is not accompanied by emotional acceptance, the pupil may become hostile, reject the results, and seek compensation in another area. The teacher must understand how the child evaluates himself as a reader and what reading success means to him.

8. Test interpretations to the pupil should not be accompanied by expressions of pleasure or displeasure over the test score. The pupil will infer that the teacher likes him if the score is high and does not like him if the score is low. The teacher is on safer grounds with statements such as the following: "Does this test score fit in with what you think of yourself?" or "Is this about what you expected?"
9. Tests should be given at the beginning of the semester rather than at the end of the school year. The test then is more likely to be interpreted as revealing something about the child rather than about the school (p. 16).¹⁸

Although the list of tests that we suggest here is not all inclusive, it provides a sufficient sample for the average teacher's needs.

Survey Tests

1. *Developmental Reading Tests: Primary Level.* Lyons and Carnahan, Chicago 16, Illinois.

These tests are designed for grades 1 to 3, and provide a measure of basic vocabulary, general comprehension, and specific comprehension.

2. *Developmental Reading Tests: Intermediate Level.* Lyons and Carnahan, Chicago 16, Illinois.

These tests are designed for grades 4 to 6, and provide measures of basic vocabulary, factual reading, reading to organize, reading to evaluate-interpret, and reading to appreciate.

3. *The Durrell-Sullivan Reading Capacity and Achievement Tests.* Harcourt, Brace & World, Inc., New York.

The purpose of this test is to determine whether or not a pupil is reading up to his capacity. It is designed for grades 2 to 6: the primary level for grades 2.5 to 4.5; the intermediate for grades 3 through 6. It has two sections: a reading capacity section and a reading achievement section. The reading capacity section, composed entirely of pictures, has subtests on word meaning and on paragraph meaning. The reading achievement section contains a word meaning test, a paragraph meaning test, a spelling test, and written recall test. The reading capacity section requires no reading. The comprehension test (word meaning and paragraph meaning) of the reading capacity section is given orally. The reading achievement test is read by the pupil without help from the examiner.

4. *Gates Primary Reading Tests.* Bureau of Publications, Teachers College, Columbia University.

This test is designed for grade 1 and the first half of grade 2 and tests for word recognition, sentence reading and paragraph reading.

5. *Gates Advanced Primary Reading Test*. Bureau of Publications, Teachers College, Columbia University.

This test is designed for the second half of grade 2 and grade 3 and gives two scores: word recognition and paragraph reading (ability to follow directions).

6. *Gates Basic Reading Tests—Elementary*. Bureau of Publications, Columbia University.

This test is designed for grades 3 to 8 and measures speed of reading, accuracy of comprehension, level of comprehension, and reading vocabulary. The tests consist of five separate tests: reading to appreciate general significance, reading to understand precise directions, reading to note details, level of comprehension, and reading vocabulary.

7. *Gates Reading Survey Tests*. Bureau of Publications, Teachers College, Columbia University.

This test is designed for grades 3 to 10 and measures vocabulary, level of comprehension, speed, and accuracy.

8. *Metropolitan Achievement Tests: Reading*. Harcourt, Brace & World, Inc., New York.

This test is designed for five levels: primary I (last half of grade 1), primary II (grade 2), elementary (grades 3 and 4), intermediate (grades 5 and 6), and advanced (grades 7 to 9). The primary tests measure word knowledge and word discrimination; the elementary test adds reading comprehension; and the intermediate and advanced tests measure word knowledge and reading comprehension.

9. *Nelson Silent Reading Test*. Houghton Mifflin Company, Boston, Massachusetts.

This test, designed for grades 3 to 9, measures ability to comprehend words, to comprehend the general significance of a paragraph, to note details, and to predict outcomes.

10. *Stanford Achievement Test: Reading*. Harcourt, Brace & World, Inc., New York.

This test is on three levels: elementary (grades 3.0 to 4.9), intermediate (grades 5.0 to 6.9), and advanced (grades 7.0 to 9.0). It provides a paragraph meaning score, a word meaning score, and a total score.

11. *Stroud-Hieronymus Primary Reading Profiles*. Houghton Mifflin Company, Boston, Massachusetts.

This test measures aptitude for reading, auditory association, word recognition, word attack, and reading comprehension, and is designed for grades 1 and 2.

Diagnostic Tests

1. *Bond-Clymer-Hoyt Silent Reading Diagnostic Tests*. Lyons and Carnahan, Chicago 16, Illinois.

This group test is designed for grades 2.5 to 6 and for retarded readers. It is made up of eleven subtests. These are: (1) recognition of words

in isolation; (2) recognition of words in context; (3) recognition of reversible words in context; (4) location of parts of words useful in word recognition; (5) syllabication; (6) locating root words; (7) phonetic knowledge—general word elements; (8) recognition of beginning sounds; (9) rhyming sounds; (10) letter sounds; and (11) ability to blend visually and phonetically.

This test is basically a test of silent reading skills. The chief weakness of the test is that it cannot be used with children who are nonreaders or who have serious reading problems.

2. *Botel Reading Inventory*. Follett Publishing Company, Chicago 7, Illinois.

This inventory consists of a Phonics Mastery Test, A Word Recognition Test, and a Word Opposites Test. It determines whether the pupil is reading at an instructional, frustration, or free-reading level.

3. *California Reading Test*. California Test Bureau, Los Angeles, California.

This test measures vocabulary and comprehension. It has five batteries: lower primary (grades 1 and 2), primary (grades 3 and 4), elementary (grades 4 to 6), intermediate (grades 7 to 9), and advanced (grades 9 to 14). Because of the limited number of items (ten to thirty), scores on the subtests are only indicative of pupil difficulties. The three subtests on vocabulary are word form, word recognition, and meaning of opposites. The comprehension subtests include following directions, following stated facts, and interpretations.

4. *Diagnostic Reading Tests*. Committee on Diagnostic Reading Tests, Inc., Mountain Home, North Carolina; distributed also by Science Research Associates, Chicago.

The test has a kindergarten-fourth-grade battery, a lower level battery (grades 4 to 8), and an upper level battery (grades 8 to 13). It includes tests for word recognition, comprehension, vocabulary, story reading, story comprehension, and, at the upper levels, rate of comprehension.

5. *Diagnostic Reading Tests*. Scholastic Testing Service, Inc., Chicago 45, Illinois.

This series of tests is offered on four levels, primary level I, primary level II, elementary (grades 4, 5, 6), and advanced (grades 7 and 8). The primary level I test measures vocabulary, rate, and comprehension and provides diagnostic subscores for word recognition, word to content relation, words in use, recalling information, locating information, and reading for descriptions. The primary level II provides subscores also for reading for meaning and following directions. The elementary and advanced levels measure rate, comprehension, and knowledge and use of sources. They provide additional subscores for functions of common sources, selection of suitable sources for a specific purpose, use of the index, and use of the table of contents.

6. *Doren Diagnostic Reading Test*. American Guidance Service, Inc., Minneapolis 14, Minnesota.

This group test for children in need of remedial instruction tests for beginning sounds, sight words, rhyming, whole word recognition, words within words, speech consonants, blending, vowels, ending sounds, discriminate guessing, and letter recognition.

7. *Durrell Analysis of Reading Difficulty*, New Edition. Harcourt, Brace & World, Inc., New York, 1955.

This test is designed for grades 1 to 6 and is made up of the following subtests: (1) Oral Reading Test; (2) Silent Reading Test; (3) Listening Comprehension Test; (4) Word Recognition and Word Analysis Test; (5) Naming Letters; (6) Identifying Letters Named; (7) Matching Letters; (8) Writing Letters; (9) Visual Memory of Words; (10) Hearing Sounds in Words; (11) Learning to Hear Sounds in Words; (12) Learning Rate; (13) Phonic Spelling of Words; (14) Spelling Test; and (15) Handwriting Test.

This test is generally recommended for less severe cases. The profile is not as adequate as it might be in that it makes no provision for recording tests 5 through 13. The check list of errors that accompanies the tests is probably the best of its kind.

8. *Dvorak-Van Wagenen Diagnostic Examination of Silent Reading Abilities*. Psycho-Educational Research Laboratories, Minneapolis, Minnesota.

This test is provided on three levels: 4 to 6; 7 to 9; and 10 to 12. It measures rate of comprehension, perception of relations between words, vocabulary in context, vocabulary of isolated words, range of general information, ability to grasp the central thought of a paragraph, ability to grasp an idea that is spread through several sentences, and the ability to interpret inferences from ideas in a paragraph.

9. *Gates Reading Diagnostic Test*, Revised Edition. Bureau of Publications, Teachers College, Columbia University.

The Gates Reading Diagnostic Test is an individual test and tests ability in recognizing words, in recognizing separate syllables, in blending sounds, and in recognizing single letters. Gates' test demands a knowledge of the child's mental age, his grade placement, and a measure of his silent reading ability. It is designed for grades 1 to 8.

The test contains a number of subtests. *The Oral Reading Test* presents eleven paragraphs of increasing difficulty. The child reads each paragraph and continues to do so until eleven errors or more are made on two successive paragraphs. The time taken to read each of these is recorded. The errors are analyzed and reference is then made to tables to determine whether or not the errors made are excessive. Tables are given for words omitted, words added, repetitions, mispronunciations, full reversals, reversal of parts, wrong beginnings, wrong middles, wrong endings, and wrong in several parts.

A second test is the *Oral Vocabulary Test*. This consists of 30 sentences each containing a key word. The child matches a key word with one of four word choices. This test is recommended for fourth grade or later and can be used in lieu of an intelligence test.

The Reversals Test consists of 30 common words which if reversed could make another word. The child pronounces each word. Examples are: ton, saw, etc.

The Phrase Perception Test consists of 26 phrases of from two to four words each. The phrases, beginning with the easier ones, are shown to the child for one-half second each.

The Untimed Word Perception Test permits the child to work out the recognition and pronunciation of each word. The test continues until the child has missed ten consecutive words.

The *Spelling Test* is made up of forty words. The teacher pronounces the word and the child spells it out.

The Gates Test also is accompanied by a test on *Visual Word Perception Techniques* which permits a more intensive diagnosis. It is composed of subtests on syllabication, using combinations of nonsense syllables; recognition of syllables which must be pronounced; the recognition of phonograms; a test on sound blendings; and letter soundings.

In addition to the Visual Perception Test a test on auditory perception is provided. It consists of four tests: the blending of letter sounds; the giving of letters for sounds; giving words when the initial sound is provided; and giving words when the final sound is provided.

10. *Group Diagnostic Reading Aptitude and Achievement Tests*. C. H. Nevins Printing Company, Bradenton, Florida.

This test for grades 3 through 9 measures paragraph understanding, rate of reading, word discrimination, arithmetic computation, spelling, vision, hearing, motor skills, and vocabulary.

11. *Iowa Every-Pupil Tests of Basic Skills*. Houghton Mifflin Company, Boston, Massachusetts.

The elementary battery is intended for grades 3 to 5. There are two tests: Test A, Silent Reading Comprehension and Test B, Word Study Skills. The elementary battery provides measures of reading comprehension, vocabulary, map reading, use of references, use of index, use of dictionary, and alphabetization. The advanced battery includes tests of paragraph comprehension, details, organization, total meanings, vocabulary, comprehension of maps, references, use of index, use of dictionary, and reading of graphs, charts, and tables.

12. *Iowa Silent Reading Test*. Harcourt, Brace & World, Inc., New York.

This test is designed on two levels: grade 4 to 8 and grades 9 to 13. The elementary test measures rate and comprehension, directed reading to locate answers to factual questions, word meaning, paragraph comprehension, sentence meaning, and location of information (alphabetizing, using guide words, and use of index). On the advanced level there are measures of rate of comprehension of connected prose, directed reading to locate answers to factual questions, poetry comprehension, word meaning in content areas, sentence meaning, paragraph comprehension, and location of information.

13. *Roswell-Chall Diagnostic Reading Test of Word Analysis Skills*. Essay Press, New York 24, New York.

This individual test measures the pupil's word analysis skills. It is particularly useful with primary and elementary school children, especially those in grades 2 through 6. The six subtests are: single consonants, consonant combinations, short vowels, rule of silent *e*, vowel combinations, and syllabication.

14. *S.R.A. Reading Record*. Science Research Associates, Chicago, Illinois.

This test by Guy T. Buswell measures ten basic reading skills: rate of reading, reading comprehension, paragraph meaning, directory reading, map-table-graph reading, advertisement reading, index reading, sentence meaning, and technical and general vocabulary. It is designed for grades 5 through 12.

Special Reading Tests

Besides the reading tests already described, there are a number of tests which the teacher may use with success in his diagnosis of pupil strengths and weaknesses. Some of these are listed below:

1. *EDL Reading Versatility Tests*, Arthur S. McDonald *et al.* Educational Developmental Laboratories, Huntington, New York.

The tests provide measures of rate and comprehension in reading for five purposes. The tests are usable from grade six to adult level.

2. *Flash-X Sight Vocabulary Test*. Educational Developmental Laboratories, Huntington, New York.

This is an individual test of the pupil's instant recognition of first- and second-grade words. The Flash-X tachistoscope is used in administering the test and the test is based on the lists of words found in *A Core Vocabulary*, published by Educational Developmental Laboratories.

3. *The Florida Reading Scales: Experimental Edition*. George Spache. University of Florida, Gainesville, Florida.

This test has scaled sections for evaluating the pupil's oral reading abilities (instructional level); for sampling the silent reading abilities until an independent level is reached; and for evaluating the pupil's auditory comprehension (the potential level at which a pupil could function).

4. *Gilmore Oral Reading Test*. Harcourt, Brace & World, Inc., New York.

This individual test is designed for grades 1 to 8 and measures comprehension, rate, and accuracy of oral reading.

5. *Gray Standardized Oral Reading Paragraphs Test*. Public School Publishing Co., Bloomington, Illinois.

This test is designed for grades 1 to 8 and measures rate and accuracy of oral reading. As the child reads the various passages aloud, all errors and hesitations are recorded. The teacher underlines mispronounced words, encircles omissions, writes in substitutions, and indicates any repetitions with a wavy line. This test emphasizes the *process* rather than the end *product* of reading. It presents a record of the errors that can be studied rather than a total score that may mean little or nothing. It is an individual test and consists of twelve paragraphs, progressing from simple to more difficult material.

6. *Learning Methods Test*. Robert E. Mills, 319 S.E. 6th, Fort Lauderdale, Florida.

This test measures the learner's ability to profit from various teaching approaches. It consists of four lessons in word recognition, each taught by a different method and is designed to discover the proper teaching method for the pupil tested.

7. *Leavell Analytical Oral Reading Test*. American Guidance Service, Inc., Minneapolis, Minnesota.

This individual test, for grades 1 to 10, has nine paragraphs of increasing difficulty and provides measures for comprehension, mechanical errors and rate. The following errors are noted: repetition of words, un-

known words, oral spelling of words, inserted or miscalled words, omitted words, lines skipped, and lines reread.

8. *Peabody Library Information Test*. American Guidance Service, Inc., Minneapolis, Minnesota.

This test measures the pupil's skill and information in the proper use of the library. It is available on the elementary, high school, and college level.

9. *Wide Range Vocabulary Test*. Psychological Corporation, New York 17, New York.

This test, designed for grades 3 through college, measures knowledge of vocabulary.

INFORMAL OBSERVATIONS

Standardized tests compare the pupil's performance with that of others. Informal observations are more in the nature of case studies. They are means by which the teacher can evaluate the pupil's total reading progress.

Generally, the teacher will select a passage for the pupil to read orally. As the pupil reads, he notes the pupil's strengths and weaknesses and later checks his comprehension. If the pupil makes more than one recognition error per twenty words or if he does not understand what he is reading, the material is obviously not appropriate for him.

Other informal checks isolate specific areas and identify the pupil's proficiency to deal with these areas. Thus Schach²⁴ has devised a "Phonics Readiness Check for Retarded Readers."

From such informal checks the teacher gradually learns on what level the pupil is reading. Combining the results from various checks he may develop a chart similar to the one following to record the errors that the pupil makes and to help him in planning further instruction for the pupil.

PUPIL PROGRESS CHART

Chronological Age

Mental Age

Reading Age

Deficiencies in Comprehension

1. Lacks vocabulary
2. Cannot use context effectively
3. Does not understand organization
4. Does not use structural clues to meaning
5. Cannot read for main ideas
6. Cannot read for details
7. Does not read to learn
8. Does not read critically
9. Does not know technical vocabulary

Deficiencies in Word Attack

1. Does not associate sound with total word

2. Does not know the names of letters
3. Does not associate sound with beginning consonant
4. Does not associate sound with medial vowel
5. Does not use configuration clues
6. Does not use structural clues
 - a. inflectional endings
 - b. compounds
 - c. roots, prefixes, suffixes
 - d. contractions
7. Cannot handle consonant blends or digraphs (speech consonants)
8. Has difficulties with long vowels
 - a. *a e i o u*
 - b. long vowels plus silent *e*
 - c. vowel digraphs
 - d. diphthongs
9. Has difficulties with *er, or, ir, ur*
10. Has difficulties with silent consonants
11. Has difficulties with syllabication

Deficiencies in Oral Reading

1. Has an inappropriate eye-voice span
2. Does not phrase correctly
3. Makes constant repetitions
4. Enunciates poorly
5. Pronounces poorly
6. Has inadequacies in pitch and volume

Deficiencies in Study Skills

1. Does not have adequate dictionary skills
2. Does not have adequate reference or locating skills
3. Cannot use indexes, glossaries, maps, etc. effectively
4. Does not use library resources effectively
5. Does not organize data

Deficiencies in Rate of Comprehension

1. Makes right-to-left movements
2. Regresses frequently
3. Vocalizes
4. Cannot skim or scan
5. Does not adjust rate to materials

Remedial Reading

Identification of the pupil's difficulties is not enough. The teacher needs to be able to suggest some solutions to the problem or to be aware of some possible alternatives in working toward a solution.

Before commenting on remedial methods let us make a few suggestions:

1. No one symptom, error, or mistake of itself implies an ailment or a general deficiency (p. 361).²² Even the best reader will err at times.
2. Perfect results on a test do not mean complete mastery. An average score of second-grade level on any test does not mean that *all* the pupil's reading skills are on a second-grade level. It is not uncom-

mon to find children getting the correct answer through the use of an incorrect method. By incorrect method is meant any method that will hinder future progress (such as guessing).

3. The child's symptoms, if not correctly interpreted, may lead the teacher to provide the improper remediation (p. 425).²² The so-called cause upon careful analysis frequently is found to be an effect of poor reading.
4. The pattern of symptoms is usually more significant than the individual symptom.
5. Cures do not necessarily mean that the correct method of cure has been found. The intangibles of teacher-pupil motivations and teacher effectiveness generally play an important role. The good teacher may have good results regardless of method used. The poor teacher may only experience failure.
6. No remedial method has universal application.

In *Psychology in Teaching Reading* (pp. 427-431)²⁵ various remedial methods are discussed. The Fernald Kinaesthetic method, the Gillingham method, and the Hinshelwood methods have been discussed in this book. Remedial methods are hardly distinct from developmental methods. One cannot "reteach" a pupil who never learned. One cannot remedy what was always lacking. Children receiving remedial education are distinct from normal readers in that they did not learn as a result of educational procedures that were effective with most children.

All the principles that apply to effective developmental instruction also apply to what are termed remedial programs. The good teacher, whatever his title may be, starts at the child's present reading level, builds self-confidence and a backlog of success, makes a thorough diagnosis, promotes interest in reading, and uses a variety of reading methods. Perhaps the remedial teacher is somewhat more permissive, delves more precisely into the causes of the reading problem, uses a greater variety of materials and motivational devices, and individualizes the program to a greater degree.

Trends in Reading

A survey of the primary and elementary reading programs should include not only what has been and what is, but what might be. Reading programs are in a constant state of becoming. They are ever-changing and the major trends are identifiable. Let us list some of these:

1. In beginning reading, more emphasis is being put on auditory and visual discriminatory skills. This stems from a clear realization that progress in reading depends on the ability to identify letter forms in words and to associate with them sounds previously learned.
2. There is an increased emphasis on the perceptual nature of the

- reading process. The emphasis is not on the eye movements in reading but rather on the interpretative aspects of reading. Reading is first and foremost thinking.
3. There is an increased awareness of chemical and physiological deficiencies and their effect on reading ability. Endocrine and vitamin deficiencies and neurological injuries are receiving more attention in research.
 4. Reading is perceived as a part of an interrelated communicative process. Reading is integrated into the total educational program.
 5. There is greater provision for individual differences. More emphasis is being given to the individualization of the reading program. Thus eclecticism in reading method is common. No one method is being advocated as *the* method.
 6. Audio-visual materials are being used more and with better understanding. Tachistoscopes are no longer simply mechanisms for increasing eye span. Many schools have films, filmstrips, and recording libraries. The possibilities of teaching machines and programmed learning are being explored.
 7. Reading is stressed as a tool skill. Reading is put to use in the attainment of predetermined goals. Reading is purposeful and the purpose determines the type of reading that the pupil does.
 8. Reading retardation is considered to reflect a syndrome of related causes or factors.
 9. Readiness is being stressed on all levels; primary, elementary, secondary, and even college.
 10. The emphasis today is on teaching the pupil how to learn by himself rather than on directing the child to do a predetermined set of exercises.
 11. There is greater emphasis on the learner himself. Reading teachers are trying to understand the whole child.
 12. Materials of reading are better and more varied. There is a noticeable surge of interest in multilevel and skill-building materials.
 13. There is increasing awareness that the basic skills must be initiated early in the reading program and that they must be maintained at all levels. Word recognition, for example, is not only the prerogative of the beginning teacher; teachers must be trained to teach it also at the high school level.
 14. Evaluation is becoming more scientific. Instruments are being refined, research is better designed, and hypotheses are being tested in more than one setting, with more than one population, and over longer periods of time (p. 21).¹⁸
 15. There is a greater balance between oral and silent reading.
 16. The team approach in reading is becoming more common. In the bigger schools and in reading clinics the school psychologist, speech correctionist, social worker, school nurse, physician, otolaryn-

gologist, endocrinologist, neurologist, and psychiatrist function with the reading specialist as a team of specialists dealing with reading problems.²³ The school nurse and/or physician provide for the overall health and physical needs of the child. They give visual and hearing screening tests. The endocrinologist may see cases of hypothyroidism or endocrine imbalance. The neurologist may deal with those children showing symptoms of brain damage.

Summary

This chapter has concentrated on some aspects of the elementary reading program. It has discussed such varied aspects as (1) formal introduction of reading teaching; (2) materials for the beginning program; (3) the steps in teaching reading; (4) group versus individualized instruction; (5) the primary and intermediate reading program; (6) diagnosis and remediation; and (7) trends in reading programs.

Perhaps we have put too much emphasis on the skills to be learned. However, other values of reading, such as interest in reading and good literature, and personal growth and development in and through reading, will accrue to the child if he has developed the necessary skills to be a good reader. One of the basic principles in motivational theory is that persons are "driven" or motivated to use their skills and abilities. The person who can see will want to use his visual skills, and the good reader generally wants to read.

Questions for Discussion

1. Examine two "experience charts" and discuss the values and limitations of each for the teaching of reading.
2. What are the chief purposes of basal reading materials, and in your estimation, how well have these purposes been met by these materials?
3. Compare the vocabulary control in basal reading series with that in some of the more prominent phonetic systems. What are the criteria of control and which seems more undesirable to you?
4. What are the steps in the actual teaching of reading?
5. What is the advantage of the analytical method of sounding?
6. Explain and discuss the implications of the statement: The teacher is not the prime director of the learning process.
7. Explain: Total individualization of instruction may not be individualizing the reading program.
8. Evaluate flexible or mobile subgrouping.
9. Discuss: Slow reading is not necessarily poor reading.
10. Discuss: Mechanical devices cannot increase comprehension potential.
11. What are the criteria for reading retardation?
12. List and discuss three reading tests that you would recommend to a school administrator as forming a basic reading testing program.

10

INTRODUCING THE PUPIL TO PHONETIC ANALYSIS

In Chapter 8 we examined the various methods of teaching reading. We intimated that an eclectic or combination approach is probably best and that the teaching of reading might best begin with the total word, but that for genuine independence in reading the parts of words should perhaps be emphasized from the beginning. The pupil must become self-directive in the process of identifying new words. The phonics program can offer much in this regard, and for this reason we treat it in the following two chapters.

It is now taken for granted that phonics have a rightful place in any reading program. Even the definitions of phonics suggest their significance. Harris (p. 324) ⁹ defines phonics ^o as "the study of the speech equivalents of printed symbols, and their use in pronouncing printed words." [†] A little later (p. 330) ⁹ he says that phonics are "essentially learning to associate the appearance of a letter or letter combination with a particular sound . . ." [†]

PHONETIC SKILLS NEEDED BY EVERY PUPIL

It is not enough for the teacher to know what phonics are. He needs to know what phonic skills are needed by every pupil. Hildreth (p. 335) ¹¹ summarizes these thus:

1. The child must learn to analyze words by identifying familiar elements in strange words. Example: bat, mat, tat, Pat, hat.

^o Albert J. Harris, *How to Increase Reading Ability*. © 1956. Longmans, Green & Co., Inc. Reprinted by permission, courtesy of David McKay Co., Inc.

[†] It is necessary to distinguish between phonics and phonetics. Phonetics is the study of the sounds used in language. These are called phonemes. Phonics, on the other hand, is the application of phonetics to reading and spelling. Phonics relates the phoneme to the phonogram.

2. He must learn to blend sounds in words to arrive at the pronunciation of the word.
3. He must develop the habit of "reading through" words by proceeding from left to right. In learning to read through words the pupil has several alternatives (p. 151).¹⁰ He may sound the beginning consonant and link this sound to the rest of the word: *h-at*, *P-at*. He may pronounce the initial consonant along with the vowel that follows and then join this element to the remainder of the word: *ha-t*, *Pa-t*. He may learn to read through the word by syllables: *hat-ter*. Or, he may look for words within words: *football*, *cowboy*. Another alternative is letter-by-letter sounding.
4. He must learn to use partial sound clues along with the context to develop fluency in reading. He thinks the sounds subvocally.

METHODS OF SOUNDING

Letter-by-letter sounding * seems to introduce many difficulties for the child. It makes blending more difficult and children frequently introduce an *uh* sound when pronouncing the letters. Thus *bat* becomes *buh-a-tuh*. It seems to be the least desirable phonic method.

Other methods, however, also present difficulties for the child. Joining the initial consonant to the rest of the word as in *b-at* may encourage the child to look first at the ending of words. This certainly is not good training in left-to-right movement. Training the child to pronounce the initial consonant along with its vowel (*ba-t*) makes it difficult to determine whether the vowel that follows is long or short.

Authorities frequently have discussed the merits of each. The following observations may guide the teacher in his choice of technique. First: One method may work better with a specific child than another. Second: It is not at all necessary to sound the initial letters. In looking at the word *hat* the child does not necessarily sound *h* and then adds *at*, or for that matter *ha* and then adds *t*. He *thinks* the sound as he moves from left to right, and if any sounding occurs, it follows the perception of the complete word. Third: The vowel might better be associated with what follows because the sound of the vowel is dependent upon its position. It is a short vowel not because it follows *h* but because it is followed by a consonant, thus occupying the beginning position in the word (as in *at*) or the medial position (as in *hat*). Strangely enough, reversals do not seem to be occasioned by teaching the child that the vowels, *a*, *e*, and *i* take on a new sound when followed by *r*, and yet the pupil needs to see the *r* to make the proper pronunciation.

Even though *b-at* may be more logical than *ba-t*, few children in the earliest stages of learning to read can appreciate the reason for this. We may have to be satisfied with teaching the pupil to sound the whole word.

* For a fuller discussion of sounding methods see Harris (pp. 333-338).⁶

This means that he should mentally "read through" the whole word, pronouncing the word only after he has seen the interrelationships among the letters.

Harris (pp. 336-338)⁹ describes another whole-word phonics. The child in approaching a word like *mast* associates the word's initial sound with another complete word such as *man*. He associates the ending with another well-known word such as *last*. The child combines them to make *mast*. The sound also may be associated with cue words. *M* is associated with milk, and in attempting to decipher *mast* the child recalls the key word and substitutes the appropriate sound.

The Phonetic Consistency of Our Language

The teaching of reading has paid relatively little attention to the phonic consistency of the English language. Authorities estimate that approximately 85 per cent of the words in the English language contain phonetically consistent elements. We do not mean that English is less phonetic than other languages. It is not quite correct to say that one language is more phonetic than another. All languages, in that they involve the use of phonemes or speech sounds, are phonetic. One language may have a more consistent spelling system and thus is more alphabetic than another. Thus in English about 85 per cent of the sounds or phonemes are spelled by the appropriate grapheme.

Bloomfield³ and Soffiètti¹⁵ suggest that the child's first reading materials should contain mainly words in which each letter has only one phonetic value. The words should be monosyllabic words. Hildreth (p. 348)¹¹ notes that it is easier to learn the relationships among sound elements within words by studying monosyllabic words. The words should contain only short vowels. Long vowel sounds, diphthongs, consonant blends, speech consonants, and words containing silent letters should be introduced only after the pupil has mastered some of the phonetic consistencies of the language. The goal of this approach to reading instruction is to familiarize children with the phonetic consistencies of the language as a basis for generalizations to *new* words.

THE ORDER OF PRIORITY IN SOUNDS

Perhaps one would not want to limit all reading materials, even at the earliest stage, in the way that Bloomfield and Soffiètti suggest, but their suggestion may have much to offer for teaching and developing a knowledge of phonics.

There is some order of priority in sounds. The Institute of Logopedics at the University of Wichita uses the term, "Order of Primitivity," to refer to the order of the development of the sounds in the language. This

order is *m, p, b, t, d, n, h, w, f, v, k, g, th, sh, zh, ch, j, s, z, r*, and *l*. Experience shows that when a child suffers a speech loss, the loss is in reverse order. The last sounds to be developed are the first sounds to be lost.

Many errors in reading arise from the fact that children cannot or do not discriminate certain sounds orally and consequently neither make the sound properly nor form the proper association between the spoken element and the written element. The teacher must determine *what phonetic elements should be taught, in what order they should be taught, and how they might be taught best.*

There are stages in the development of general reading skills, of word attack skills, and of specific phonic skills. The teacher must know what the goals of achievement are at each level for each of these. He must realize that children progress at different rates through the various levels and that they differ from one another in the levels they ultimately attain. This makes the identification of a natural sequence in teaching phonic skills even more important.

This sequence is not used for the setting of definite standards of attainment for all children, but rather for the guidance of teachers in their attempt to provide for individual differences. Each child must be led through the sequence at a rate at which he can succeed. Thus, there really are no first-grade skills. There is only a sequence of skills through which children normally should proceed. *This sequence the teacher must identify.*

Word recognition skills are important. Proper training in them increases independence in attacking words, improves comprehension, and leads to more accurate pronunciations. Perhaps as significant is the fact that they are not acquired in a year or two. Training needs to be continuous, it needs to be applied in many situations, and it needs to be sequential.

Davis^{5, 12} reports that some six-year-old children have not mastered *l, r, s, th, sh, zh, z*, and *wh*. Van Riper and Butler (p. 64)¹⁸ report that most of the articulatory errors made by primary children involve *f, l, r, s, sh, k, th*, and *ch*, and that elementary children have most difficulty with *r, s, l, th*. Hildreth¹¹ points out that the *k, q, v, x, y*, and *z* should be introduced last.

There are other reasons for not using certain letters in initial phonic (and possibly reading) exercises. The letter *x*, for example, represents six distinct sounds. It has the sound of *ks* in *box*, of *gz* in *exist*, of *ksh* in *anxious*, of *gzh* in *luxurious*, of *z* in *xylophone*, and of *gsh* in *anxious* (*angshus*). The letter *q* occurs only with *u* and then has the sound of *kw*. The letter *k* is readily confused with the much more used hard *c*.

Because of these data the following letters might best be excluded from early phonic experiences: *k, q, v, x, y, z*. There is no great advantage in introducing them. Relatively few words use these sounds. A word like *you* may be taught as a sight word. This does not mean that these sounds

are not introduced in the first grade. Some youngsters may be able to handle them almost immediately. However, the best way to proceed in reading is from the known to the unknown and most children will be able to handle the remaining letters quite comfortably. The remaining consonants and the short vowels may be introduced in the following order: first *m, t, b, h, p, n* and the short vowels, then *d, w, g, c*, and *j*; and finally *f, l, r*, and *s*.

The Sequence of Phonic Skills

Before getting involved in the minute details of phonetic analysis, and let us from the start say that few children or even adults fully master these details, let us suggest one sequence in which phonic skills might be taught. In the two chapters that follow the program looks something like this:

Phonic Skills

1. Auditory discrimination of speech sounds
2. Teaching the initial consonant sounds and beginning consonant substitution
 - (a) *M, T, B, H, P, N*
 - (b) *D, W, G, C, J*
 - (c) *F, L, R, S*
3. Teaching the short vowel sounds
4. Teaching the ending consonants
5. Teaching median vowel substitution
6. Introducing the
 - a* in "all" words
 - a* in "car" words
 - a* in "bass" words
 - u* in "full" or "dull" words
7. The consonant blends: *bl, br, cl, cr, dr, fl, fr*, etc.
8. The letters *K* and *Q*
9. The long vowels
 - (a) *a, e, i, o, u, y*
 - (b) Long vowel plus silent *e*
 - (c) *ai, ay, ea, ee, oa, oe, ow*
10. The *ly* ending
11. The *le* ending
12. *S* pronounced as *z*
13. Letters *v, x, y, z*
14. Speech consonants *ch, sh, th, wh, gh, ph*
15. Soft sounds *c* and *g*
16. Three letter consonant blends, *scr, shr, spl, spr, squ, str, thr*
17. The effect of *R* on a previous vowel, *er, ir, or, ur*, and *Wa*
18. The diphthongs, *ei, ie, oi, oy, oo, ou, au, aw, ow, ew, ue*
19. Syllabication
20. Silent consonants
21. Foreign words
22. Special problems of two- and three-syllable words.

The program suggested above is necessarily flexible. We have presented what we feel is *one way* of setting up a logical sequence. Other writers

prefer a different sequence. It is quite probable that children rarely learn the materials in any prescribed order

*The Consonants M, T, B, H, P, N, D, W, G, C, J
and the Short Vowels **

Initial reading exercises, as was pointed out in the previous chapter, are designed to develop a basic recognition vocabulary. In working towards this goal the pupil is asked:

1. to do picture reading;
2. to associate sounds with the whole word;
3. to use the context both for identifying the word and for understanding its meaning;
4. to learn the names of the individual letters;
5. to write the letters; and
6. to associate sounds with the beginning consonant and with the median vowel.

The pupil must learn to hear sounds in words, to see phonograms or to notice the letter or letters that represent the sounds of whole words, and to blend phonograms. Later he will learn rules and will apply them to new words.

The major aim in this initial stage is to teach: (1) the consonants *m, t, b, h, p*, and *n* in the beginning position; (2) the short vowels within monosyllabic words; and (3) a phonetic and a sight or recognition vocabulary. The child needs to learn what is meant when the teacher says: "This word begins with an *m, t, b, h, p*, or *n* sound."

For years, educators have debated the question whether consonants or vowels should be introduced first. Perhaps the question is invalid. If pupils are to begin with complete words, consonants and vowels must necessarily be introduced concomitantly. The reasons for studying consonants first usually include the following:

1. There is a greater correspondence between the consonant sounds and the letters used to represent them than between the vowel sounds and the letters used to represent them;
2. Consonant letters are more significant in the perceptual image of a word; (thus, "j-hnn-- h-t th- b-s-b-ll" is more readily identified than -o---ie -i- --e -a-e-a--.)
3. Consonant letters to a great degree determine the sound of the vowel. Thus in one-syllable words the vowel is usually short when it is in the beginning or the middle position and followed by a consonant (pp. 35-37).⁸

* Teaching might begin with the first six of these consonants.

Children early learn to articulate both the short and the long vowel sounds. The short vowels are usually introduced before the long vowels because they occur most frequently in monosyllabic words, are phonetically more consistent, and occur more frequently in words that the pupil meets in initial reading. The most natural sequence in learning the vowels seems to be: learning the meaning of vowel, learning the short vowel sounds, learning the long vowel sounds, learning to discriminate between the short and long vowel, learning the effect of adding an *e* to a syllable containing a short vowel in the medial position, and learning the sound of two vowels written together.

Figure 10-1 provides a list of words that can be composed from *m*, *t*, *b*, *h*, *p*, and *n* and the short vowels. For most of these words children will have developed meaning. Words in the list for which no meaning has been developed may be used by the teacher to broaden children's vocabularies and meaning.

Figure 10-1. Monosyllabic Words Formed by M, T, P, H, P, N and the Short Vowels

am	ban	ham	in	man	nab	on	Pam	tab	up
an	bat	hat	it	map	Nan		pan	tam	
at	Ben	hem		mat	nap		pat	tan	
	bet	hen		men	net		Pat	tap	
	bib	him		met	nib		pen	tat	
	bin	hip		mob	nip		pep	ten	
	bit	hit		mop	not		pet	Tim	
	Bob	hop		mum	nub		pin	tin	
	bum	hot			nun		Pip	tip	
	bun	hub			nut		pip	Tip	
	but	hum					pit	tit-tat	
		hut					pop	Tom	
							pot	ton (tən)	
							pun	top	
							pup	tot	
								tub	
								tut	

The child's reading vocabulary probably does not need to be controlled to the extent that it now is. The child's early language training in the home is not structured for him. He hears thousands of words and learns to understand and to speak them. His training is sequential only as he makes it so. No one formally teaches him the word.

The results with individualized reading also tend to indicate that the child learns much more than is formally taught him. He in fact masters that for which he is psychologically, physiologically, and mentally ready.

We suggest control in his phonic vocabulary (not in the number of words necessarily but in the rate of introduction of phoneme-phonogram relationships) so that he will more quickly master the principles that

undergird language structure. Introducing him to the phonetic consistencies will make him more conscious of the sounds in words, and having learned the principles that guide their relative consistency, he will be able to attack hundreds of words that he has not previously seen in print. There is no great virtue in teaching a word such as "came" as a configuration, if by application of the principle of pacing, the pupil will soon know it and understand it as a phonetically consistent word.

After the pupil has mastered the consonants, *m, t, b, h, p*, and *n*, he may advance to the letters *d, w, g, c* and *j*. Here is an additional list of monosyllabic words that may be formed from these and the previously introduced consonants and short vowels.

bad	cog	dip	gun	jog	Pud
bag	con	Doc	gut	jot	
bed	cop	dog		jug	Tad
beg	cot	don	had	jut	tag
bid	cub	Don	hid		Ted
big	cud	dot	hog	Mac	tic
bog	cup	dub	hug	mad	tug
bud	cut	dud		Mig	
Bud		dug	jab	mud	wac
bug	dad		jag	mug	web
	Dad	gab	jam	nag	wed
cab	dam	gad	Jan	Ned	wet
cam	Dan	gag	Jed	nod	wig
can	den	gap	jet		win
cap	did	get	jib	pad	wit
cat	dig	God	jig	peg	won (wən)
cob	dim	got	jim	Peg	
cod	din	gum	job	pig	

TEACHING THE BEGINNING CONSONANT

During the first phase of the child's experience with phonics the pupil should learn how to sound the common consonants and the short vowels. Many children will have mastered all the skills required at this level in the readiness program. They can name most letters and have associated the appropriate sound with the letters. For others, teaching tasks remain. Teaching the initial *t* sound, for example, consists of the following steps:

1. The teacher pronounces some words that begin with the *t* sound such as *Tom, ten, tan, tin*, or *too*. The *t* sound may be slightly elongated.
2. The teacher asks the pupils what they noticed about the initial sound. Were the initial sounds alike or different?
3. The pupils give other words beginning with a *t* sound.

4. The pupils should learn to discriminate visually the beginning *t* sound from other beginning sounds. At this stage *t* is given a name.
5. The pupils learn to associate the *t* sound with both the capital and small case letter *t*. An exercise similar to the one in Figure 10-2 may help the pupil to make this association.

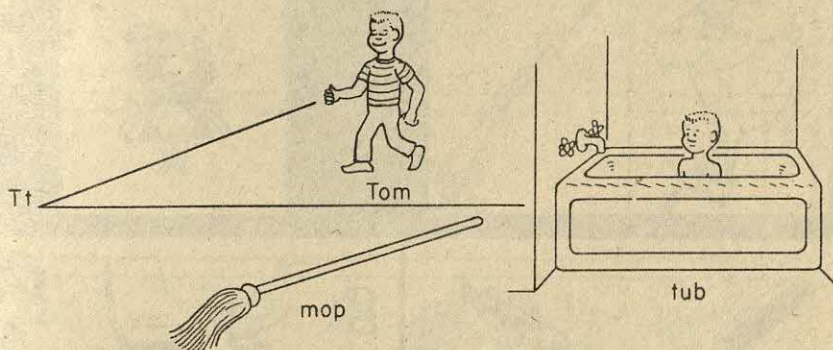


Figure 10-2.

The pupil should draw a line from the letter *t* to the words beginning with the same letter. In this exercise, it is important that the pupil also say the name of the picture so he may gradually develop the concept that words that sound alike initially have the same letter at the beginning.

A second exercise requires the child to write under a series of pictures the initial consonant of the name of each picture. Figure 10-3 is illustrative of this exercise.

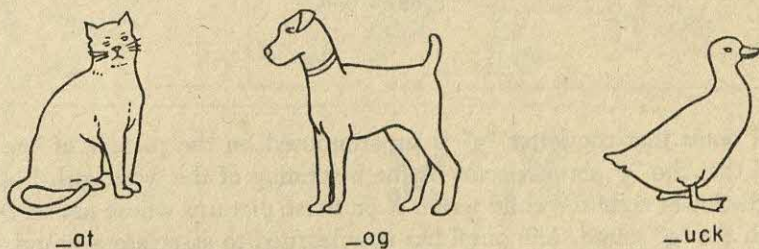


Figure 10-3.

Another technique is the following. Normally the child is asked to name the objects in the upper left corner (see Figure 10-4), namely "goat" and "gun." The teacher then notes that both words begin with the same sound. Proceeding to the lower left corner of Figure 10-4 the teacher names other objects and asks the child to put an X on those whose name begins with the same sound as "goat" and "gun."

The teacher then points to the picture in the upper right of Figure 10-4

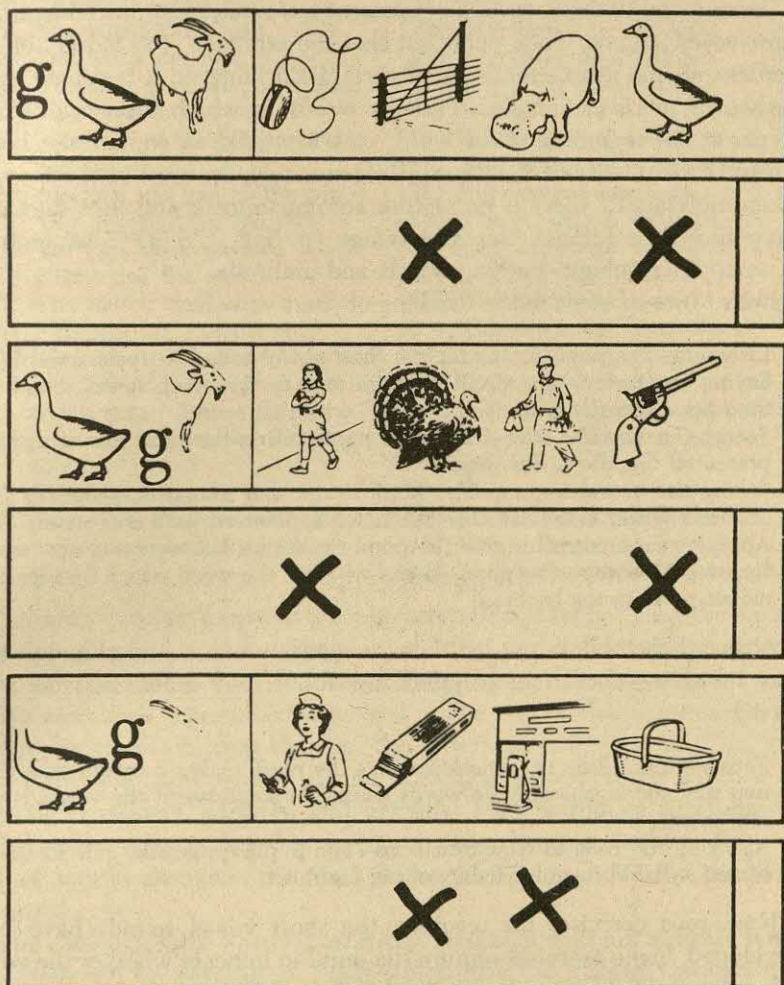


Figure 10-5.

The teacher may need to drill some youngsters in the mouth geography of beginning sounds. He goes through the motions of making a sound without actually using voice. The pupil must guess what sound was made. The teacher may read a list of words beginning with various sounds and the pupil records on his paper in order whether the words begin with a specific sound such as *p* or not. He writes *yes* or *no* on his paper.

TEACHING THE SHORT VOWEL

Terman and Walcutt (p. 212) ¹⁷ present a technique for introducing the short vowel sounds. They point out that the sentence "Fat Ed is not up" contains all the short sounds. A picture of Ed lying on a bed may make the words more meaningful. Perhaps words in which the vowel sound occurs at the beginning of the word, such as *at*, *Ed*, *is*, *on*, and *up*, better illustrate the quality of the sound. Unfortunately, for most of these words taken individually there is no picture accompaniment and thus they may have limited usefulness. Hay and Wingo (p. 5, 6, 7, 8, 9) ¹⁰ use pictures of an apple, elephant, Indian, ostrich, and umbrella.

Betts ¹ lists six steps in the teaching of short vowels:

1. Listening—The pupil listens for the short vowel sound in spoken words.
2. Saying the Sound—The pupil is taught to say the short vowel sound and then associates the label "short vowel" with that sound.
3. Seeing the Vowel Letter—The letter representing the short vowel sound is presented visually to the pupil.
4. Seeing the Vowel Setting—The pupil learns that monosyllabic words have only *one* vowel letter and that this letter is *followed* by a consonant.
5. Applying the Generalization—The pupil applies his knowledge to new words.
6. Insuring Meaning—The pupil checks whether the word which he identified makes sense in the sentence.

Although Betts does not list them as separate points and although they may be only elaborations of point five above, two others may be mentioned:

7. Formulating a Rule or Generalization—The pupil makes a broad generalization such as: in one syllable words ending in a consonant the vowel is usually short.
8. Applying the Rule to New Situations—The pupil applies the rule to the accented syllable in polysyllabic words (rabbit).

Numerous exercises for teaching the short vowel sounds have been developed. Some exercises require the pupil to indicate whether the vowel is long or short. The pupil may simply print an *l* or *s* on the line provided, thus indicating that the word given has either a long or short vowel.

The teacher may read a list of words (am, bat, bib, bun, ham, hat, hop, hot, hut, man, met,—see Figure 10-1) and asks the pupil to write in order the appropriate short vowel sound heard in each of the words.

Sample Materials

By the time the child has finished this first stage he should be able to pronounce all the words in Figure 10-1 and in the list on page 244. For most of them he should have learned a meaning. The teacher can use the

list of words in many ways. One good way is to form sentences such as the following and to have the pupil read them.

- | | |
|---|---------------------------------------|
| (1) The man gives Nan a pet. | (20) The pup bit Tom on the hip. |
| (2) The tot is in the tub. | (21) Mud is in the pit. |
| (3) The pup bit the man. | (22) The mud is on the ball. |
| (4) Ben has a pet hen. | (23) The ball goes in the pit. |
| (5) The bum gives his pup a bun. | (24) A big bug is in the web. |
| (6) Pam gives him a net. | (25) Bud got ten cod fish in the net. |
| (7) Tom runs in the pit to get the ball. | (26) Bud has fish to eat. |
| (8) Bob hits the ball in the pit. | (27) The cop nabs the bad man. |
| (9) The pup nips on the nut. | (28) Jan eats jam and ham. |
| (10) The pen has a tin nib. | (29) The pig digs in the mud. |
| (11) Pam mops the mat. | (30) Peg throws the ball in the can. |
| (12) The mat is tan. | (31) The dog begs for fish. |
| (13) The pup hops in the tub. | (32) The cub is on the cot. |
| (14) The man gives Nan a tip. | (33) Tim has a dip in the dam. |
| (15) Ben has pop. Ben gives ham to his pup. | (34) In the mug is pop. |
| (16) Tom has his pet pup in a tin tub. | (35) Is the cub in the den? |
| (17) The ham is on the bun. | (36) Is the pig digging in the mud? |
| (18) Bob wants a hot bun and ham. | (37) Tim eats hotdogs on a bun. |
| (19) Bob gives Pam the pots and pans. | (38) Jed calls a cab. |
| | (39) The hen eats the bug. |
| | (40) Pam is napping in the bed. |
| | (41) Don is digging in the mud. |
| | (42) The dog wants to eat hotdogs. |

Certainly teacher-prepared phonic materials should not limit the variety of reading materials. In the first place children find it enjoyable to develop their own sentences from the words suggested in the above lists.

We also have reproduced here and at the end of this chapter a series of simple stories or ideas that use the letters *m, t, b, h, p, n, d, w, g, c*, and *j* and the short vowels. These materials introduce the child to his favorite characters, children and animals. They introduce the following sight words: *a, give, has, his, is, the, to, are, do, goes*, and *of*. They use two structural elements: the third person singular *s* (hits) and the plural *s* (pups).

The choice of sight words is arbitrary. Research does not indicate which words should be introduced. Sight words must be learned through their shape, configuration, their ascending or descending letters, or through meaning clues.

The stories are not equally difficult. Some children will encounter few problems in reading even the most difficult ones. Others may experience difficulty even with the simplest. The teacher must start the child on the level on which he can succeed and let him progress as fast as he can. Let us present a few sample stories: *

* For a complete listing of these stories see Appendix I at the end of this chapter. Stories 1 through 44 are especially appropriate at this level of phonic development.

Sample Stories

Tim and Tom (Story 1)

Tom has a ball.
 Tim has a bat.
 Tim is at bat.
 Tim hits the ball.

Tom Gives Tip a Nut (Story 9)

Tom has a pup.
 The pup has a name.
 His name is Tip.
 Tom has a nut.
 The nut is tan.
 Tom gives the nut to Tip.

Nan Wants a Pet (Story 13)

Nan wants a pet.
 Ben has ten pet pups.
 Nan wants a tan pup.
 Ben gives Nan a tan pup.
 Nan gives the pup a name.
 The tan pup gets the name Pip.

Tim and His Pet Hen (Story 17)

Tim has a pet hen.
 His pet hen has a pen.
 His pet hen is not in the pen.
 Tim wants his pet hen in the pen.
 "Run in the pen! Run in the pen!"

In general, each line of print might occupy a single page and be accompanied by a picture. The picture usually should illustrate the meaning of the *total* sentence, not merely a single word. Thus, in the first sample story above, a picture of a boy holding a ball might accompany the line, "Tom has a ball." The first story then might consist of six pages: page 1, the title page; pages 2, 3, 4, and 5, the four sentences that make up the story; and page 6, the complete story, including the title. This page should not be accompanied by a picture.

STRUCTURAL ANALYSIS

The pupil also should develop some skill in structural analysis. In fact, structural analysis may logically precede phonetic analysis. Structural analysis is possible with three kinds of words. A word may have an inflectional ending such as *s*, *es*, *ed*, *or*, *ing*; it may be a derived word, being constructed from a root, a suffix and/or a prefix; or it may be a compound word.

In the initial stage the child commonly is introduced to two kinds of words which may be analyzed structurally. The child learns that the *s* can change the word in two ways: (1) It changes the verb into third person singular; and (2) It makes a noun plural in form. The teaching of the *s* plural is easier when it is accompanied by another word in the sentence that suggests the plural. The sentence, *Tom has ten pet pups*, is an example of this.

As the pupil's skill in structural analysis develops, he may identify two simple words in one larger word. He may see *tea* and *pot* in *teapot*; *some* and *thing* in *something*; or *bat* and *boy* in *batboy*.

Frequently, he may be able to identify by sight only one of the two

words and must identify the other through picture reading, contextual clues, or phonetic clues. The ability to see little words—and they should be words—in bigger words is helpful in pronouncing the word.

And he gradually learns to break the word into its syllables and to handle words composed of roots, prefixes, and suffixes.

Syllabication must receive attention at all levels of reading instruction. For most pupils, learning in this area is greatest during the intermediate grades. However, even in the first grade the pupil must be trained to hear and see the distinct vowel sounds that occur in a word. Gradually, some children will learn that the number of vowel sounds indicates the number of syllables in a word.

In the primary grades structural analysis is the following:

1. Teaching of the common word ending *s*.
2. Teaching two-syllable words—beginning with words ending in *ing*.
3. Doubling the consonant before adding endings beginning with a vowel.
4. Teaching the compounds such as *gunman*, *hotdog*.
5. Teaching simple prefixes and suffixes.
6. Teaching the apostrophe *s*.
7. Teaching the past tense with *ed*.
8. Teaching the plural with *es*.
9. Teaching simple syllabication.

Betts¹ has outlined the steps in applying phonics skills to the syllables of words:

1. The pupil must first learn to hear the number of syllables in spoken words.
2. He must learn to identify syllables in printed words. Early in the grades the pupil needs to learn that some words ending in *ed* have only one syllable (*cooked*); others have two syllables (*landed*).
3. He must learn to accent the proper syllable. Accentuation should be taught only after the pupil has mastered steps one and two and after having learned something about prefixes and suffixes. These latter rarely are accented (*intend*, *fishing*).
4. He must learn to apply phonic skills to the separate vowels in words;
 - a. He applies the short-vowel rule to the stressed syllable (*rabbit*).
 - b. He identifies such vowel-phonograms as *ar*, *er*, *ir*, *or*, *ur*.
5. He must check if the word makes sense in the sentence.

After the pupil has met success with beginning consonants and median vowels, he should be ready for more advanced phonic skills. This does not mean that all children will have mastered the first elements. Some need individual work; with others it may be necessary to use almost entirely a kinaesthetic approach. This is usually a much slower process.

TEACHING ING

After dealing with the inflectional ending *s*, the pupil is ready to learn the ending *ing*. The words in stories 18 to 44 provide drill in its use. With its introduction comes the first discrimination between one- and two-syllable words. One-syllable words have only one vowel sound. Words adding *ing* each have two vowels that are sounded and therefore are called two-syllable words.

The syllable is very helpful in attacking new words. After all, monosyllabic words are merely syllables to which we have given a meaning. Hildreth (p. 151)¹¹ notes that "The syllable, not the phoneme, is the basic unit of speech articulation. . . ." * There are two kinds of syllabication: one for writing and one for pronunciation. The former is inconsistent and generally one must consult the dictionary to be certain.

The teacher demonstrates how *ing* can be added to verbs to form two-syllable words: hitting, batting, getting, hopping, running, tagging, tugging, nagging, and winning. These words are phonetically consistent and the pupil needs to learn how to handle them. The words must be used in sentences. The pupil should note that the consonant is doubled before adding the *ing* and that the second consonant is silent.

END-CONSONANT SUBSTITUTION

The pupil learns end-consonant substitution through exercises similar to the one below. The teacher first asks him to name the picture and

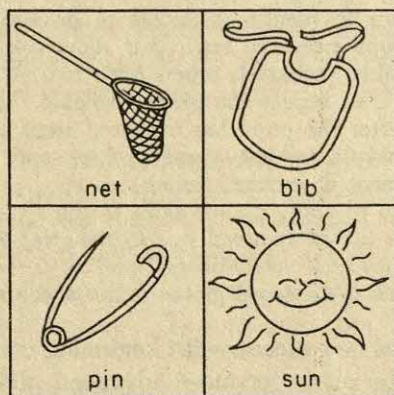


Figure 10-6.

* Gertrude Hildreth, *Teaching Reading*, © 1958, Holt, Rinehart and Winston, Inc. Reprinted by permission.

then to identify two of the four words beneath the pictures that have the same ending sound. The pupil next learns to identify the specific ending sound.

The teacher may want to use one or more of the first eight stories to introduce and teach the end consonant. He should concentrate first on the end consonants *b*, *m*, *n*, *p*, and *t*. The *b*, for example, occurs in such simple monosyllabic words as *bib*, *Bob*, *nib*, *nab*, *tab*, and *tub*; the *m*, in *am*, *bum*, *him*, *ham*, *Pam*, *Tim*, and *Tom*; the *n*, in *an*, *Ben*, *bin*, *bun*, *hen*, *man*, *men*, *Nan*, *on*, *pan*, *pin*, *ten*, and *tin*; the *t*, in *at*, *bat*, *bet*, *but*, *hat*, *hit*, *hot*, *hut*, *mat*, *it*, *net*, *not*, *nut*, *Pat*, *pet*, *pit*, *pot*, *tat*, and *tot*; and the *p*, in *hip*, *hop*, *nap*, *pep*, *Pip*, *pup*, *tip*, and *Tip*.

Beginning with these the teacher shows the pupil that substituting one final consonant for another completely changes the word. The word *pet*, for example, may become *pen* or *pep*; *tan* may become *tap* or *tab*. The pupil must learn that changing of the final consonant both alters the word and falsifies the meaning. In the sentence, "Bob wants a pet," changing the *t* on *pet* to an *n* alters the meaning of the utterance. The pupil must learn to think the new sound and blend it with the first part of the word.

After work with end consonants *b*, *m*, *n*, *p*, *t*, the pupil should be introduced to the end consonants *c*, *d*, and *g*. The *d*, for example, is met in *bad*, *bed*, *bid*, *Bud*, *dad*, *had*, *mad*; the *g*, in *bag*, *big*, *bug*, *dig*, *gag*, *hog*, *Mig*; and the *c* in *Doc*, *Mac*, and *Wac*. The *h*, *j*, and *w* are not taught in the final position at this time.

MEDIAL-VOWEL SUBSTITUTION

Medial-vowel substitution also is taught at this stage. The pupil learns that changing the vowel alters both the appearance of the word and its meaning. The child must be taught medial-vowel substitution inductively. He must see what changing the vowel does to the form of the word, to its pronunciation, and to its meaning. The vocabulary suggested in Figures 10-1 and 10-6 provides numerous possibilities for teaching the skill: For example, *bat* may become *bet*, *bit*, *but*; *cat* may become *cot* or *cut*; *hat* may be changed to *hit*, *hot*, *hut*; and *pat* may become *pet*, *pit*, or *pot*.

The Letters F, L, R, and S

Having mastered the eleven consonants suggested above, the pupil now is prepared to learn words containing the *f*, *l*, *r*, and *s* sounds. Teachers will find that children generally have much more difficulty articulating these sounds than those that have been considered previously. In some instances it is absolutely necessary to teach the placement in the mouth

(the mouth geography) for each sound. The child must be taught the lip and tongue position required in making the sound.

Before discussing the phonetic and structural elements to be taught, let us list additional monosyllabic words that are made up of letters introduced thus far.

Figure 10-7. Monosyllabic Words Formed by B, C, D, F, G, H, J, L, M, N, P, R, S, T, W and the Short Vowels

as (az)	fop	lag	or (ór)	rod	sin
	fór (fór)	lap		rot	sip
bus	fun	led	pal	rub	sir (sər)
	fír (fər)	leg	pus	rug	sis
cur (kər)	fur (fər)	let		rum	sit
		lid	rag	run	sob
fad	gas	lip	ram	rut	sod
fag	Gus	lit	ran		son (sən)
fan		log (lóg)	rap	sad	sop
fat	has (haz)	lop	rat	sag	sub
fed	her (hər)	lot	red	Sal	sun
fen	his (hiz)	lug	rib	Sam	sum
fib			rid	sap	sup
fig	if	nor (nôr)	rig	sat	
fin	is (iz)		rim	set	us
fit		of (ov)	rip	sib	
fog	lad	off (óf)	rob	Sid	was (wäz)
Ending in ff	Ending in ll		Ending in ar	Ending in r (rr)	Ending in ss
buff	all (ól)	jell	bar (bär)	err (ər)	ass (as)
cuff	ball	Jill	car	bur (bər)	bass (bas)
duff	bell	lull	far	burr (bər)	Bess
huff	bill	mell	jar	pur (pər)	boss (bòs)
muff	Bill	mill	mar	purr (pər)	cuss
puff	bull (bul)	mull	par		hiss
riff-raff	call	Nell	tar		joss
ruff	cull	null	war (wòr)		less
whiff (hwif)	dell	pall			mass
	dill	pell			mess
	doll	pell-mell			miss
	dull	pill			moss (mòs)
	fall	poll (pól)			muss
	fell	pull (pül)			pass
	fill	rill			Tess
	full (fúl)	roll (röl)			toss (tòs)
	gall	sell			
	gill	sill			
	gull	tall			
	hall	tell			
	hell	till			
	hill	toll (töl)			
	hull	wall			
	ill	well			
		will			

The new words introduce additional *a* sounds: the *a* (ó) sound in all, call, fall, gall, ball, and wall; the *a* (ä) sound in bar, car, far, jar, mar, par, and tar; and the *a* sound in bass, pass, mass. The pupil should note that *a* followed by *r* in monosyllabic words is the *ä* sound. These words may be learned as the "car" words. When *a* is followed by *l* it has the *ó* sound, and the words may be identified as the "all" words. It is not necessary to differentiate for the pupil the *a* in bass from the *a* in hat.

The pupil also must learn that quite commonly monosyllabic words ending in an *f*, *l*, and *s* sound double the final consonant letter.* He must learn that in these words only one written letter is pronounced and that in spelling he must use two letters to reproduce the sound.† These words present other difficulties. Words ending in double *ll* preceded by *u* sometimes are pronounced as *u* and sometimes as short *u* sound: thus *bull*, *full*, *pull*, but also *cull*, *dull*, *gull*, *hull*, *lull*, *mull*, and *null*. For this reason *full* and *pull* may be introduced as sight words at this level of phonic development.

Even though the *ær* sound as in *cur* and the *ó* sound as in *for* and *boss* are listed in the vocabulary in Figure 10-7, these sounds should not be introduced at this time. Thus, the words *her* and *for* should be introduced as sight words. The words *log*, *of*, *war*, *son*, and *was* must also be learned as sight words.

The letter *s* frequently is pronounced as a *z*. We have listed some of these words: *as*, *has*, *his*, *is*, and *was*. This pronouncing of *s* as *z* generally occurs

- (a) at the end of monosyllabic words;
- (b) at the end of most plurals—bugs;
- (c) when the *s* occurs between two vowels; and
- (d) after *s*, *z*, *sh*, *zh*, *ch*, and *j*, the *s* is an *es*; after *p*, *t*, *k*, *f*, and *th*, the *s* is simply an *s*; after all other consonants the *s* is a *z*.

Appendix II at the end of the book contains numerous two-syllable words in which *s* occurs between two vowels and thus is pronounced as a *z*. Some common examples are: *Moslem*, *muslin*, *possess*, *resin*, *rosin*, and *wisdom*.

The following sentences, and stories 45 through 64 listed at the end of the chapter, are based on the vocabulary thus far suggested. The length of the stories has been increased purposefully. The young reader gradually needs to widen his attention span. He needs to develop the ability to think along with a series of sentences. Sentence exercises should be used to

* Exceptions to this rule are: *as*, *bus*, *clef*, *gas*, *has*, *his*, *if*, *is*, *nil*, *of*, *pal*, *plus*, *pus*, *this*, *thus*, *us*, *was*, *yes*; also *beef*, *dwarf*, *golf*, *half*, *loaf*, *meal*, *mail*, *roof*, *self*, *soil*, *thief*, *wheel*, and *wolf*.

† Some other words fit this pattern: *ebb*, *egg*, *add*, *fizz*, *buzz*, *fuzz*.

broaden the vocabulary and to emphasize aspects not thoroughly learned. Sentences similar to the following may serve these purposes.

- | | |
|-----------------------------------|-----------------------------------|
| 1. Will you fill the cup for Dad? | 9. All have fun hitting the ball. |
| 2. Sam is sitting in the bus. | 10. Give us a hotdog on a bun. |
| 3. Sid ran into the wall. | 11. Pam and Jim have fig bars. |
| 4. Sam sets his son on his lap. | 12. Sis is sitting on Dad's lap. |
| 5. The pig puffs and puffs. | 13. The lid fell off the can. |
| 6. Don is sitting in the hot sun. | 14. The rat ran under the wall. |
| 7. Jim is sipping pop. | 15. In the jar is a fat bug. |
| 8. I have a net full of fish. | 16. Fill the car with gas. |

Two-Syllable Words and Compounds

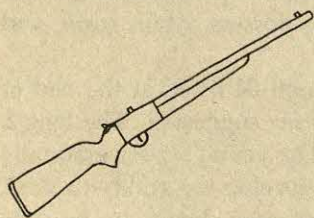
Having learned the letters in this section and having learned something about syllabication and the forming of two-syllable words, the pupil is ready to tackle words of two syllables and especially compounds.

COMPOUNDS

Appendix II at the end of this chapter lists numerous two-syllable words composed of the short vowels and the letters previously introduced, *B, C, D, F, G, H, J, L, M, N, P, R, S, T, W*. The teacher may use these with the better reader to advance his reading and phonetic skills.

The list contains such common compounds as bedbug, bedpan, bellhop, bigtop, bigwig, bulldog, carhop, cannot, cobweb, cutup, forbid, forget, forgot, godson, gunman, hellcat, humbug, into, mudsill, offset, onset, pell-mell, pigpen, popgun, riff-raff, sunlit, sunset, sunup, titbit, tiptop, tomcat, tomtom, upon, upset, and wigwag.

A simple technique for teaching the compounds is the following:



gun



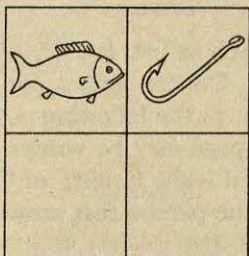
gunman

man

Another exercise consists of two columns of monosyllabic words found in compound words. The pupil is required to join a word in column I to a word in column II to form a compound word.

I	II	Compound Word
1. bell	1. top	1. bellhop
2. big	2. set	
3. sun	3. dog	
4. for	4. hop	
5. bull	5. get	

A third exercise consists of a page full of pictures. Each pair of pictures represents a compound word. Initially the pupil may be only required to pronounce the compound word. Later he may have to write the word.



fishhook

PREFIXES AND SUFFIXES

The teacher also may use the words in Appendix II to teach the simple prefixes and suffixes. The most common prefixes are (16):⁴

ab (from)	dis (apart)	ob, op, ov (against)
ad, a, ap, at (to)	en (in)	pre (before)
be (by)	ex, e (out of)	pro (in front of)
com, con, col (with)	in, en, im, em (into)	re (back, again)
de (from)	in (not)	sub (under)
		un (not)

The following words taken from Appendix II contain some of these:

ajar (ab)	consul (com)	undid (un)
admit (ad)	disarm (dis)	unfed (un)
allot (ad)	disbar (dis)	unfit (un)
annul (ad)	input (in)	unpin (un)
commit (com)	misfit (mis)	unrig (un)
compel (com)	mishap (mis)	unwed (un)
concur (com)	submit (sub)	unwell (un)
confab (com)		

Finally, the pupil may be introduced to some suffixes. The suffix usually indicates what part of speech the word is. The *ing* ending has already been discussed. The following words from Appendix II contain some common suffixes.

blissful (ful)
fitful
glassful
sinful

dimness (ness)
hotness
madness
sadness
wetness

godless (less)
hapless
sinless

random (dom)
seldom
wisdom

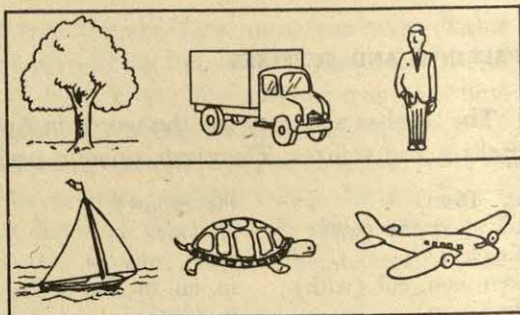
bedding (ing)
canning
inning
legging
netting
topping
webbing

hamlet (let)

Many of the suffixes, such as *est*, *ing*, *er*, *or*, *ed*, and *d* are common with monosyllabic words. The *est* ending, for example, may be taught through an exercise similar to the following.

On the left side of the page may be written such simple questions as "What is the tallest," "What is the fastest," or "What is the hottest?" The pupil puts an X through the picture that answers the question.

Which is the tallest?



Which is the fattest?

Other common suffixes are: *tion*, *sion*, *cion*, *ty*, *al*, *able*, *ment*, *man*, *ic*, *ious*, *ous*, *eous*, *ence*, and *ance*.⁴ These are introduced in words discussed in Chapter 11.

For exercises useful in teaching the prefixes and suffixes see Chapter 12.

The Possessive Case

At this stage the possessive case may be introduced to the pupil. The teacher must illustrate the use of the possessive and the apostrophe and must develop exercises that elicit from the pupil the correct application of the possessive rule.

The apostrophe is used also with contractions, thus: don't (do not); let's (let us); hasn't (has not); didn't (did not); can't (can not); I'm (I

am); I'll (I will); I've (I have); haven't (have not); hadn't (had not); isn't (is not); wasn't (was not); he's (he is); he'll (he will); she's (she is); she'll (she will); you're (you are); you'll (you will); we're (we are); we'll (we will); they're (they are); and they'll (they will).

In this instance the apostrophe indicates that one or more letters have been omitted.

An exercise similar to the following, requiring the pupil to match appropriate pairs, may be used to teach simple contractions on the first- and second-grade level.

does not	wasn't
can not	hasn't
will not	doesn't
was not	won't
has not	can't

Summary

The initial phonic exercises should have one chief function: that of developing a reading vocabulary. This may be done in many ways. It is possible to form a direct association between meaning and the printed symbol. In this case the word is identified through its shape and configuration or through picture reading. Another approach continues auditory and visual discrimination training and involves phonetic and structural analysis. The child associates the *whole word* with a sound, but from the beginning identifies letters or groups of letters that recur repeatedly in words and that constantly have the same sound. These parts of words give clues to the sounds of other words, thus helping the child both to pronounce and indirectly to associate meaning with the printed symbol. This method starts with the initial consonant and teaches the child to read through the word. This means proceeding from left to right, much as in reading a sentence.

There is little research to indicate which words children should learn first. Present assumptions in this regard are based on frequency count. But is this a valid criterion? Bloomer² notes that word length may be a more important consideration than frequency of use. The longer the word, the more difficult it is. Thus, monosyllabic words are introduced first. We are concerned at least somewhat with teaching those words that most aid in the acquisition of a vocabulary.

The materials here presented lend themselves to programming and machine teaching. The material has been presented in small discrete steps. We have emphasized that each new level of growth depends upon success with previous tasks.

Programmed materials provide for self-instruction. They allow the

pupil to proceed at his own rate. They give accurate information concerning his progress and the level that he has attained. By informing the pupil of his success or failure they reinforce correctness in response. It would seem that the systematic phonic program combined with proper programming might go a long way toward individualizing instruction within the classroom. The problem is not how to individualize instruction, rather, how can the teacher individualize without ignoring the principle that learning proceeds from the known to the unknown by building upon previous knowledge?

The materials in this chapter are in no way intended to constitute a reading program or to limit the child's reading. It is not necessary for each pupil to learn on the spot each new word that he encounters. The development of a recognition vocabulary should be based on (1) the acquisition of words that can only be learned by sight or configuration; (2) the acquaintance with numerous words that only gradually become a part of the pupil's reading vocabulary (no great emphasis should be put on these in early reading); and (3) *the acquisition of a method that permits the pupil to work out the pronunciation of new words*. This chapter has been concerned primarily with the introduction of this last aspect. The pupil must be systematically trained in the development of such a method.

Questions for Discussion

1. Distinguish between phonics and phonetics and discuss the implications of these for the teaching of reading.
2. What phonic skills should each learner possess?
3. What are the relative merits of the various methods of sounding words?
4. Adduce arguments to support Soffiètti's position on the nature of the pupil's first reading materials?
5. Discuss: "There really are no first-grade skills. There is only a sequence of skills through which children should proceed."
6. Examine a basal reading series, identifying points of similarity and difference between the phonics program presented there and the program recommended in this book.
7. Adduce arguments both for and against the introduction of phonics instruction from the beginning.
8. What is the meaning of phonic readiness?
9. Outline briefly the sequence for the teaching of phonic skills proposed by three reputable authorities.
10. Discuss the importance of structural analysis in the teaching of reading.
11. Discuss the arguments for teaching phonics through phonemically-regular words, synthetically, and/or through sight words.
12. Adduce evidence from five different studies that reading teachers need more background in phonics.

APPENDIX I

SAMPLE MATERIALS

1

Tim and Tom

Tom has a ball.
 Tim has a bat.
 Tim is at bat.
 Tim hits the ball.

2

Tom and Tip

Tom has a pup.
 The pup has a name.
 His name is Tip.
 Tip is a pup.

3

Tip Wants His Hut

Tom has a pet pup.
 His name is Tip.
 Tom is in the hut.
 Tip wants his hut.

4

Tim and Nan

Nan has a bat.
 Tim has a ball.
 Nan is at bat.
 Nan hits the ball.
 Tim gets the ball.

5

Tip Tips the Tub

Tom has a pup.
 His name is Tip.
 Tip wants the mop in the tub.
 Tip tips the tub.
 Tom runs to get Tip.

6

Pop and Nuts

The man has pop and nuts.
 Tim wants the pop.
 Nan wants the nuts.
 The man gives Tim the pop.
 Nan gets the nuts.

7

The Pet Wants the Nut

Tim has a pet.
 Nan wants the pet.
 Nan pats the pet.
 Nan has a nut.
 The pet wants the nut.
 Nan gives the nut to the pet.

8

Tip Gets the Ball

Tom has a pup.
 His name is Tip.
 Tom has a ball.
 Tom has a bat.
 Tom hits the ball in a pit.
 Tip gets the ball.

9

Tom Gives Tip a Nut

Tom has a pup.
 The pup has a name.
 His name is Tip.
 Tom has a nut.
 The nut is tan.
 Tom gives the nut to Tip.

10

Tom Wants the Ball

Tip is in the hut.
 Tom is in the hut.
 Tip has a ball.
 Tom has a bat.
 Tom wants the ball.
 But Tip runs in the tub.

11

The Ball Falls in the Tub

Tom has a ball.
 Tom gives it to Tim.
 Tim has a bat.
 Tim hits the ball.
 Tom runs to get it.
 The ball is in a tub.

13

Nan Wants a Pet

Nan wants a pet.
 Ben has ten pet pups.
 Nan wants a tan pup.
 Ben gives Nan a tan pup.
 Nan gives the pup a name.
 The tan pup gets the name Pip.

15

Nip Gets in the Tub

It is hot. It is hot.
 Tom is in the tub.
 Nip wants in the tub.
 Nip hops and hops.
 Nip gets in the tub.

17

Tim and His Pet Hen

Tim has a pet hen.
 His pet hen has a pen.
 His pet hen is not in the pen.
 Tim wants his pet hen in the pen.
 "Run in the pen! Run in the pen!"
 Tim's pet hen runs in the pen.

19

Dan and Jip

Dan has a cub.
 His name is Jip.
 Jip runs in the mud.
 Dan calls Jip.
 Jip! Jip! Jip!

12

Tom Pats His Pup

Tom has a pet.
 The pet is a tan pup.
 His name is Tip.
 Tom has a ball.
 Tom hits the ball.
 Tip gets the ball.
 Tip gives the ball to Tom.
 Tom pats the pup.

14

Pip Has a Nap

Nan is in the hut.
 Pip is in the hut.
 The pup is hot.
 Nan is hot.
 The pup hops in the tub.
 The pup has a nap.
 The pup naps on the mat in the tub.

16

Nan and Tim

Nan has ham on a bun.
 Tim wants the ham and bun.
 Nan gives the bun and ham to Tim.
 Tim gives Nan pop and nuts.

18

Bob (on a bike) and Tip (dog)

Bob can go.
 Tip can run.
 Go, Bob, go.
 Run, Tip, run.
 Bob goes and Tip runs.

20

Tim Has a Job

Tim has a job.
 Tim has to dig a pit.
 Tim digs and digs.
 Tim gets hot.

21

Jim, the Pig

Jim is a pig.
 Jim is in a pen.
 Jim digs in the mud.
 Jim is "a pig in a pen."

23

Tom and Tip

Tom is a cat.
 Tip is a dog.
 Tip has a big ball.
 Tom wants the ball.
 Can Tip get the ball?

25

Pip and Jim

Pip is a dog.
 Pip bit a man.
 The man calls Jim.
 Jim is a cop.
 Jim nabs the dog.
 Jim throws the dog in a pen.

27

Dan and Tim

Dan has ten cats.
 Tim wants a cat.
 Dan gives Tim a cat.
 Tim gives the cat a name.
 The name is Tom.
 Tom is a big cat.

29

Dan and Jip

Dan throws Jip a ball.
 Jip gets the ball.
 On the ball is a bug.
 Jip eats the bug.

22

Tip and Nip

Tip is a pup.
 Nip is a cat.
 Tip wants to run.
 Nip wants a nap.
 Nip goes to bed.

24

Peg and the Pig

Peg has a pig.
 His name is Jim.
 Jim has a bed in the mud.
 Jim throws mud at Peg.
 Peg gets mad.

26

Tim and Tom

Tim has a pet.
 The pet is a cat.
 His name is Tom.
 Tom gets in a can.
 Tim cannot get him.
 Tim cannot hop up.
 Dad gets the cat.
 Dad and Tim pet the cat.

28

Jed, the Nag

Jed is a nag.
 Jed has a fish.
 Jed wants to eat the fish.
 Can Jed eat the fish?

30

Dan and Jip

Dan has a big ball.
 Jip wants the ball.
 Dan throws the ball.
 Dan calls: "Get the ball, Jip!"
 Jip gets the big ball.

31

Tom, the Cat

Tim has a cat.
 The cat has a name.
 The name is Tom.
 Tom wants a nap.
 Tom gets on the bed.
 Tom naps in the bed.
 Tom gets mud on the bed.

33

Ben and The Cat

Ben has a fish.
 The cat wants the fish.
 Ben gives the fish to the cat.
 The cat eats the fish.

35

The Bad Dog

The dog has the ball.
 Tad wants his ball.
 The dog runs in the hut.
 Tad runs to the hut.
 But Tad cannot get the ball.

37

Ned and Ted

Ned and Ted are cubs.
 The cubs want to eat.
 Ned and Ted run to the dam.
 Ned gets a fish in a net.
 The cubs eat fish.

39

The Cub Eats

The cub is in his den.
 The cub wants to eat.
 The cub gets jam and ham.
 The cub eats jam and ham.

32

Tim and His Pig

Tim has a pig (hog).
 The pig (hog) is in the pen.
 The pen is big.
 In the pen is mud.
 The pig (hog) is in the mud.

34

Tip

Tip is a dog.
 Tip is hot.
 Tip hops in a tub.
 Tip gets wet.

Tip runs in the mud.
 Nan calls: "Tip, do not run
 in the mud!"
 But Tip is a bad dog.
 Tip runs in the mud.

36

Dan and Jip

Dan has a cub.
 The cub is a pet.
 The cub has a den.
 The cub is in the den.
 The name of the cub is Jip.

38

Dan and The Cab

Dan has a job.
 Dan is a cop.
 Dan has to go to his job.
 Dan calls a cab.
 Dan gets in the cab.
 The cab gets Dan to his job.

40

Jim Wants a Fish

Jim wants to get a fish.
 Jim throws a bug to the fish.
 The fish catches the bug.
 But Jim cannot get the fish.

41

Mac and Nip

Mac is a dog; Nip is a cat.
 Mac has a mat.
 Nip has a bed.
 Mac wants to nap in the bed.
 Mac cannot nap in the bed.
 Mac goes to his hut.

A bad dog runs at Nip.
 Nip runs and runs.
 Mac runs at the bad dog.
 Mac and Nip nap in the bed.

42

Ted and Tad

Ted is a dog. Tad is a cat.
 Ted and Tad run to the tub.
 A ball is in the tub.
 Ted and Tad want the ball.
 Can Ted and Tad get the ball?
 Ted gets in the tub.
 Ted gets the ball.

43

The Jet

Up and up goes the jet.
 The jet goes up and up.
 Tim and his dad are in the jet.
 Tim and dad go up and up.
 The jet dips and hops.
 Up in the jet go Tim and dad.
 Up and up go Tim and dad.

44

Pam, Ned, and Dad

Pam and Ned want to fish in a pit.
 Dad wants to fish at the dam.
 Nan digs in the mud at the dam.
 Nan gives a bun to pets (ducks) in the dam.
 Dad gets a fish.
 Dad gives the fish to Pam and Ned.

45 °

Pat Is Ill

Nan has a pet (horse).
 The pet's name is Pat.
 Pat is ill.
 Nan gets the Doc.
 The Doc gives Pat a pill.
 Pat gets well.

46

The Ram

Sam has a pet ram.
 His name is Sid.
 Sid has a pen.
 Sid is Sam's pal.

47

Dot Calls Her Pals

Dot wants to play.
 Dot calls her pals.
 Dot calls Pam and Sal.
 Dot has lots of fun.

48

Jim and Ben (squirrel)

Jim has a bag.
 The bag is full of nuts.
 Jim gives nuts to Ben.
 Ben eats the nuts.

* Stories 45 through 64 emphasize the letters *f*, *l*, *r*, and *s*. In addition the following words have been introduced: away (əwā); does (dəz); for (fôr); full (fûl); have (hav); he (hē); her (hər); I (I); live (liv); now (nou); off (ôf); play (plā); pull (pûl); put (pût); see (sē); and with (with). They also contain the words cannot, into, pell-mell, hot dog, and under. The sight words with the exception of *off* appear in Dolch's basic sight vocabulary of 220 words (p. 265).⁴

49

Dot and Mac

Dot has a dog.
His name is Mac.
Mac wants Dot's doll.
Mac pulls and tugs at the doll
Mac pulls and pulls.
Mac gets the doll.

51

The Bum and His Pet

Sam is a bum
Sam has a red hat.
Sam has a tan pet (monkey).
His name is Mac.

Mac wants to play.
Mac gets Sam's hat.
He hops on Sam's cot.
He wants to play with Sam.
He hops and hops on the cot.
Pop! goes the cot.

53

The Jar

Pam wants the jam.
It is in a big jar.
Pam cannot get the jar.
Pam tugs and tugs.
The jar falls on the rug.

55

Sam, The Pig

Bill wants a pet.
The man gives him a pet.
It is a fat pig.
Bill puts the pig in a pen.
Bill gives the pig a name.
His name is Sam.
Sam gets in the mud.
Sam is a mess.

50

Tom and Sam

Tom and Sam want to fish.
Tom has a rod.
Sam has a rod.
Tom and Sam go to the dam.
Tom gets a big fish.
He pulls and pulls.
But the fish gets away.

52

Ned, Bill, and Nell Play Tag

Ned, Bill, and Nell want to play tag.
Bill is "it."
Bill tags Nell.
Nell now is "it."

Nell wants to tag Ned.
Ned runs pell-mell.
Nell cannot tag Ned.

Nell wants to tag Bill.
Bill runs pell-mell.
But Bill falls and Nell gets him.
Nell tags Bill.
Now Bill is "it."

54

The Red Car

Pam and Bob have a car.
The car is red.
Pam gets in the car.
Bob gets in the car.
Pam and Bob have fun in the car.

56

Sad Sam

Sal has a tall son.
His name is Sam.
Sam sells gas.
But Sam wants to fish.
He wants to go to the dam.
He wants to sit in the sun.
The dam is full of bass.
Sam has a rod but cannot fish.
He has to sell gas for his mom.
Sam is a sad lad.

57

Ned Gets a Jet

Bill has a jet.

His jet is a Mig.

The Mig is red.

Ned wants Bill's Mig.

He wants to give Ted gum, a gun,
and a ball.

But Bill will not give Ned the jet.

Ned is sad.

Ned wants the Mig.

Ned tells dad to get him a Mig.

Ned now has a big red jet.

Bill and Ned play with the Migs.

59

Jed Wants to Play Tag

Jill has a doll.

It is a big doll.

The name of the doll is Sal.

Pam has a doll.

The name of her doll is Nell.

Pam wants to play dolls.

Ted wants Pam and Jill to play tag.

Pam and Jill run to play tag.

It is fun to play tag.

Ted, Pam, and Jill have lots of fun.

Jill falls in the mud.

Jill does not want to play tag.

Ted gets mad.

He wants to play tag.

He gets Jim and Bill to play tag.

61

Bob and His Ball

Bob has a bat and ball.

Bob runs to tell Ted.

Bob and Ted play ball.

Bob is at bat.

Ted throws the ball.

Bob hits the ball to the top of the
hill.

At the top of the hill is a well.

The ball rolls into the well.

Bob and Ted cannot get the ball.

Bob goes to tell Dad.

58

Gus and Sid

Gus and Sid are pals.

Gus is fat and Sid is tall.

Gus calls Sid a sad sap.

Sid calls Gus a fat tub.

Gus gets mad and sits on Sid.

Gus lets Sid get up.

Gus and Sid now are pals.

60

Gus and His Hot Rod

Gus has a hot rod.

It is red.

The man puts gas in the hot rod.

Now it is full of gas and is running.

Gus gives it the gas.

The hot rod has a lot of pep.

62

Bess and the Rat

In the hut is a cat.

The name of the cat is Bess.

Bess is full of fun.

Bess runs and hops on the bed.

Bess pulls on a rag doll.

Bess pulls and pulls.

The leg of the rag doll rips.

A rat runs under the bed.

Bess wants to get the rat.

But the rat runs under the wall.

Sal Falls in the Dam

Dad, Sam, and Sal want to fish.
Dad has his rod and net.
Dad fills gas in the car.
The car is full of gas.

Now Mom wants to fish.
Mom goes with Dad, Sam, and Sal.
All go to fish.
Dad, Sam, and Sal fish at a dam.
The dam is full of bass.

Sal calls: Dad, Dad, I have a fish.
It is a bass.
Sal lets the bass fall in the dam.
Sal falls in the dam.
Dad, Mom, Sam, and Sal have lots of
fun.

Mac, the Bug

Mac is a bug.
He lives in a tin can.
He has a tub.
It is a nut.
But Mac does not have a bed.
Mac wants a bed.

Mac calls a cab.
The cab is a dog.
Mac hops on the dog.
Mac wants to get a bed.

Mac sees a cob.
Mac wants a cob for a bed.
Mac gets off the dog.
Mac gets a cob.

Now the dog wants the cob.
Mac and the dog tug at the cob.
Mac cannot win.
The dog is big.
But Mac has wit.

Mac has a pin.
He gives the dog a jab.
The dog runs and runs.
Mac gets his bed.

Mac goes to bed.
Mac has a hut, a pin, and a bed.
Mac naps in his bed.
But Mac has no cab.

APPENDIX II

*Two-Syllable Words Formed From the Short Vowels
and B, C, D, F, G, H, J, L, M, N, P, R, S, T, and W*

Completely Regular Words

acrid	confess	hectic	netting	signal
Adam	consul	Helen	nipping	sinless
admit	cut-up	hellcat	nugget	solid
agog		helmet	nutmeg	sonnet
album	debit	hiccup		submit
allot	demi	hissing	occult	sultan
annul	denim	hotbed	offset	summit
arid	dental	hotness	onset	sunlit
atlas	despot	hubbub	optic	sunset
atoll	digging	humbug		sunup
attic	dimness	humming	padding	
	discus		pallid	tablet
ballad	discuss	impel	panel	tactic
bandit	dispel	inlet	panic	tanning
barrel	distill	inning	Paris	tappet
barren	distress		pastel	tapping
baton	dobbin	jagged	paten	tariff
batting		jocund	patten	telling
bedbug	elfin	jotting	pedal	tenet
bedding	empress		pellet	tennis
bedpan	epic	lagging	pell-mell	tepid
begging	epos	lapel	pepsin	tidbit
bellhop		lapin	peptic	timid
bidding	fabric	Latin	peril	tinsel
bigtop	fillet	legging	picnic	tiptop
bigwig	fiscal	Lenten	pigpen	titbit
billet	fistic	letup	planet	tomcat
bitting	fitting	limit	pollen	tomtom
blessing	forbid	limpid	pontiff	tonic
bobbin	forget	linen	popgun	tonsil
bonnet	forgot	liyd	possum	topic
budding	frolic	living	public	topping
buffet	funnel		puppet	torrid
bumming				tunnel
	gallant	madam	rabbit	undid
cabin	gambit	madness	rabid	unfed
cactus	gamin	magnet	rapid	unfit
camel	gamut	mallet	rascal	unless
campus	getting	mammal	rebel	unpin
candid	gifted	mascot	relic	unrig
canning	gimlet	matting	rental	until
cannot	given	mattress	ribbing	unwed
carat	goblet	medic	riff-raff	unwell
carol	goblin	mental	rigging	upon
catsup	goddess	merit	robin	upset
catnip	godless	midriff	running	
cobweb	gospel	mimic	rustic	webbing
colic	gossip	misfit		wedding
combat	gunman	mishap	sadness	wetness
comet		missal	salad	wigwag
comic	habit	missing	sandal	willing
commit	hagged	moral	satin	winning
compel	hamlet	mudsill	septic	
concur	hansel	muffling	serif	
confab	hapless	muscat	setting	

The pupil has learned that the *a* when followed by *r* most commonly is pronounced as *ä*. In the following words the *a* is pronounced as *ä* unless otherwise indicated.

ajar (əjar)	garlic
carbon	jargon
carcass (kärkas)	mama (mämə)
carhop	Martin
carpet	marvel
carton	papa (päpä)
darling	pardon
disarm	parka (pärkä)
disbar	parson
garden	target

A second sound of *a* is *ò*. This sound occurs most commonly where *a* is followed by *l*. In the following four words *a* is *ò*: Baltic, falcon, fallen, and pitfall.

A few monosyllabic words were introduced in Chapter 10 in which *u* followed by *l* is pronounced as *ù*. The following two-syllable words are further illustrations of this:

blissful	fitful	input*
bulldog	fulfil	pulpit
bullet	glassful	sinful

The *o* frequently is pronounced as a short *u*. The following monosyllabic and polysyllabic words are illustrative:

come	blossom	gallop	mongrel	salmon
does	boredom	galop	monkey	scaffold
done	bottom	godson	month	season
dove	button	govern	monthly	seldom
glove	cannon	grandson	mormon	sermon
love	carrot	hammock	mother	sodom
none	canyon	handsome	mutton	smother
one	color	havoc	oneself	shovel
shove	comfort	honey	oneway	stomach
some	coming	idol	oven	scallop
son	common	income	parrot	someone
ton	compass	kingdom	patron	sometime
won	confront	lemon	phantom	sometimes
abbot	cotton	lesson	pilot	someway
above	cover	lonesome	pivot	summon
among	crayon	loveless	piston	symbol
apron	donkey	lovely	poison	symptom
atom	dragon	loving	prison	synod
bacon	dozen	mammon	purpose	tendon
ballot	falcon	mammoth	random	tiresome
baron	felon	matron	ransom	wagon
beacon	flagon	melon	reason	welcome
become	freedom	method	reckon	wisdom
bigot	frontal	Monday	ribbon	zealot
bishop	gallon	money	riot	

* In *put* and *input*, the *u* is not followed by *l*.

It is interesting to note that in most instances the *o* is followed by *m*, *n*, *p*, *t*, or *v*.

An analysis of two-syllable words reveals that the second last letter often is silent when followed by *n* or *l*. Thus:

bison	garden	lesson	metal	prison
bitten	glisten	lighten	model	redde
button	glutton	listen	mitten	rotten
chosen	gotten	madden	mutton	sadden
christen	hasten	maiden	pardon	sharpen
cotton	hidden	mason	parson	sudden
dozen	kitten	mantel	petal	tassel
frozen	lessen	medal	pistol	tighten
				widen

11

ADVANCING THE CHILD'S PHONIC SKILLS

We write this chapter with a great degree of apprehensiveness. The chapter presents so many elements that even we are not sure whether it might stimulate confusion or insight. If each child had to learn formally every principle or generalization proposed here before he learned to read, few might be termed readers and those of us who are readers would gladly exclaim, "Thank God, I have learned to read."

Yet, the good reader has a functional knowledge of the phonic skills discussed in the chapter.

It would seem that the artful teacher needs a much vaster, more systematic, and more generalized knowledge than the good reader. He needs to know *why* a word is pronounced as it is.

The various sections of this chapter can be used as *references* when the teacher needs to teach specific phonic skills in the classroom. This does not tie the teacher to the sequence suggested in this book. In each instance we have presented common monosyllabic words that best illustrate the sound that is being considered.

Thus, in the pages that follow, we have preferred to be complete rather than to limit the analysis to skills usually acquired during the elementary school years. Since this book is written for teachers, a complete program will be presented which may be adapted to individual classroom needs.

In the previous chapter emphasis was on the use of single consonants and short vowels in attacking new words. The pupil on this level learned to substitute a single consonant or a short vowel. If he knew the word, *cat*, he should have learned to decipher *bat*; and, if he knew the word *bet*, he should have learned to decipher *but*. Furthermore, if he knew the word, *cat*, he should now be able to attack the word *cats*; and, if he knew *sit*, he now should be able to handle *sits*.

This chapter introduces the pupil to the remaining levels of word attack. For simplicity sake let us refer to the skills discussed in the

previous chapter as level one. Level two teaches the pupil to use consonant blends, the letters *k* and *q*, the speech consonants, the soft sounds of *c* and *g*, and the long vowels. The pupil becomes familiar with more structural skills, especially with *ed*, *d*, *t*, *es*, and *ing*. He also learns to attack words that contain such vowel combinations as *ai*, *ay*, *ea*, *ee*, *oa*, or *oe*, in which the first vowel receives its long sound and the second one is silent.

Level three introduces the pupil to the special combinations, *ar*, *ir*, *or*, *er*, and *ur*, to the diphthongs, and to formal training in syllabication and accentuation. The pupil already has dealt with simple compounds and perhaps with simple prefixes and suffixes. Now this is expanded.

Level four introduces the pupil to silent letters and to the special phonetic and structural problems associated with two- and three-syllable words.

Level five, which is discussed in Chapter 12, emphasizes the use of the dictionary in attacking words whose meaning as well as form may be unfamiliar to the pupil. On the first four levels the words should always be in the listening and/or speaking vocabulary of the pupil.

In this chapter then we are concerned primarily with the learning of:

1. The consonant blends in the initial and final position
2. The letters *k* and *q*
3. The long vowels:
 - (a) *a*, *e*, *i*, *o*, *u*, *y*
 - (b) Long vowels plus silent *e*
 - (c) *ai*, *ay*, *ea*, *ee*, *oa*, *oe*, *ow*
4. The structural endings: *ed*, *d*, *t*, and *es*
5. The letters *v*, *x*, *y*, *z*
6. The speech consonants: *ch*, *sh*, *th*, *wh*, *gh*, *ph*
7. The soft *s* sound of *c*
8. The *j* sound of *g*
9. The three-letter consonant blends
10. *ar*, *er*, *ir*, *or*, *ur* and *wa*
11. The diphthongs: *ei*, *ie*, *oi*, *oy*, *oo*, *ou*, *au*, *aw*, *ow*, *ew*, *ue*
12. Syllabication and accentuation
 - A. The *ly* ending
 - B. The *le* ending
13. Silent letters
14. Foreign words
15. Special problems of two- and three-syllable words

Let us begin with consonant blends.

Teaching the Beginning Consonant Blends

The consonant blends must be distinguished from the speech consonants, *ch, sh, th, wh, ck, gh, ph, qu*, and *ng*. These latter are digraphs * and thus are two consonants that have a single speech sound. The consonant blends, on the other hand, consist of two or more letters each having its own distinct sound. The following consonant blends occur: *bl, br, cl, cr, dr, dw, fl, fr, gl, gr, pl, pr, sc, scr, shr, sk, sl, sm, sn, sp, spl, spr, squ, st, str, thr, tr*, and *tw*. The blends *nk* and *sk*, and the three-consonant blends, *scr, shr, spl, spr, squ, str*, and *thr*, probably should be taught later.

The order in which to introduce the remaining consonant blends is somewhat arbitrary. The child gradually needs to learn to handle *bl, br, cl, cr, dr, dw, fl, fr, gl, gr, pl, pr, sc, sl, sm, sn, sp, st, sw, tr*, and *tw*.

Figure 11-1 provides a list of monosyllabic words in which the above consonant blends occur. Many of these words are not in the meaning vocabulary of the first- or second-grade pupil. However, enough of them are so the teacher can teach the pronunciation of most of the blends in the initial position.

Figure 11-1

Monosyllabic Words Formed by Bl, Br, Cl, Cr, Dr, Dw, Fl, Fr, Gl, Gr, Pl, Pr, Sc, Sl, Sm, Sn, Sp, St, Sw, Tr, and Tw, the Letters B, C, D, G, H, J, M, N, P, T, W, F, L, R, S, and the Short Vowels.

Bl—bliss, bloc, blot, bluff
 Br—brad, Brad, brag, bran, brass, brat, bred, brig, brim, bring
 Cl—clad, clam, clan, clap, class, clef, cliff, cling, clip, clod, clog, clot, club
 Cr—crab, crag, cram, crass, cress, crib, crop
 Dr—drag, dram, dreg, dress, drill, drip, drop, drub, drug, drum
 Dw—dwell
 Fl—flag, flak, flap, flat, fled, fling, flip, flit, flop, fluff
 Fr—fret, frill, frog, from
 Gl—glad, glass, glen, glib, glim, glum, glut
 Gr—grab, gram, grass, grid, griff, grill, grim, grin, grip, grit, grits, grub, gruff, grum
 Pl—plan, plat, pleb, plod, plop, plot, plug, plum, plus
 Pr—prep, press, prig, prod, prop
 Sc—scab, scan, scar, scat, scuff, scull, scum
 Sl—slab, slag, slam, slap, slat, sled, slim, sling, slip, slit, slob, slot, slug, slum
 Sm—small, smell, smog, smug, smut
 Sn—snag, snap, sniff, snip, snub, snuff, snug
 Sp—span, spar, spat, sped, spell, spic, spill, spin, spit, spot, spun
 St—stab, staff, stag, stall, star, stem, sten, step, stiff, still, sting, stop, stub, stud, stiff, stun
 Sw—swell, swig, swim
 Tr—tram, trap, tress, trill, trim, trip, trod, trot
 Tw—twig, twit

* Digraphs also may consist of two vowels having a single speech sound.

Before the blends are used extensively in reading, the teacher should work with very simple sentences or even words. For example, the *br* sound may be associated with the *br* in Brad; the *cl* with club; the *cr* with crib; the *dr* with dress; the *gl* with glass; the *gr* with grass; the *pl* with plum; the *pr* with (printing) press; the *tr* with trap; and the *tw* with twig. Cards containing the blends and a picture of an object whose name contains the appropriate sound help to fixate these sounds.

Since the early phonic experiences emphasized primarily the short vowel sounds, the pupil should have little difficulty pronouncing the following syllables: *

a-ab, ac, ad, aff, ag, all, am, an, ap, ar, ass, at
e-eb, ec, ed, eff, eg, ell, em, en, ep, ess, et
i-ib, ic, id, iff, ig, ill, im, in, ip, iss, it
o-ob, oc, od, og, om, on, op, ot
u-ub, uc, ud, uff, ug, ull, um, un, up, uss, ut

Most of these syllables he has pronounced as parts of words. He also has learned to make initial consonant substitution. He has learned that by changing the initial consonant he can change *cab* to *dab*, *gab*, or *nab*.

Now he must extend this process. Instead of substituting one consonant for another, he substitutes two consonants for one. Thus *cab* becomes *crab*, *grab*, *scab*, *slab*, or *stab*.

Some children may prefer to use another technique. They see the familiar word in the new word. They see the word *lot* in *blot*, *rag* in *brag*, *rim* in *brim*, *ring* in *bring*, *lap* in *clap*, *lip* in *clip*, *rib* in *crib*, or *rod* in *trod*. Instead of substituting two consonants for one they add one consonant to a familiar word.

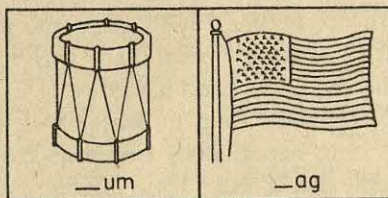
Unfortunately, when the pupil learns the speech consonants, such as *ch*, *sh*, *th*, and *wh*, this technique doesn't work. *Sh*, for example, is quite different in *sh-ip* than in *s-hip*. The *sh* sound cannot be separated as can the *sn* sound.

Teaching of blending should be consistent throughout the reading program. If the teacher has taught the pupil to associate the initial consonant with the subsequent vowel (*ca-t*), he should follow the same procedure here. If, on the other hand, he has taught the pupil to associate the vowel with the sound that follows (*c-at*), it is important to adhere to the same method in blending the consonant blend with the remainder of the word. The teacher needs to present both techniques and permit the individual pupil to use the one that he can handle best.

The pupil will become more familiar with the beginning consonant blends and the endings suggested above by doing exercises requiring him to join a consonant blend to one or more of the endings. The pupil may

* It is recommended that these be sounded only as parts of words.

be shown a picture of an object under which is printed the ending. He has to add the consonant blend. For example:



A variant form of this exercise to be used at more advanced levels requires the pupil to join a consonant blend to a select group of endings to form meaningful words:

st		
_____ab	_____ing	_____ed
_____uff	_____an	_____og
_____im	_____ap	_____ad

Perhaps the pupil should be given the blends, as for example, *bl*, *br*, *fr*, *gl*, *sl*, *st*, *sw*, and *tr*.

The pupil's proficiency in dealing with word endings and with rhyming words may be further developed by having him complete exercises such as the following:

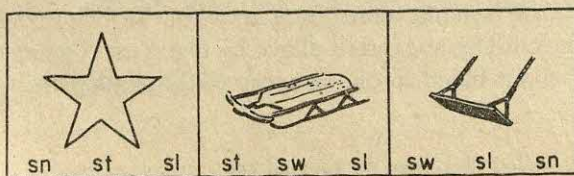
bluff	grim	clan	flip
blot	spot	cliff	plan
brim	cling	drip	stiff
bruff	gruff	crop	flop

Each word begins with a consonant blend and thus the exercise also can be used to develop skill in this area.

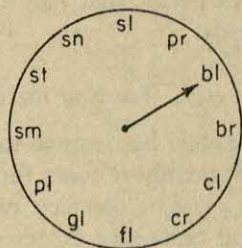
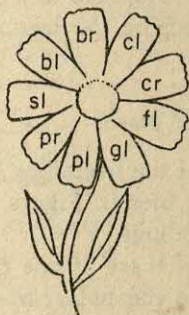
The pupil may be given a specific ending such as *im* and then must form words that rhyme with *im* and that begin with a blend. For example: brim, grim, slim, swim, trim.

Here are additional exercises useful in teaching beginning blends:

1. The pupil is asked to look at a picture, say the name of the picture, and select the consonant blend that represents the beginning sound of the name:



2. Present a mimeographed sheet of words with a beginning single or double consonant and have the pupil identify those with two beginning consonants.
3. The teacher says words beginning with a single and a double consonant and asks the pupil to indicate by a predetermined method when the word begins with a consonant blend.
4. Ask the pupil to discriminate between the various blends, for example, *cl* and *cr*. The teacher may read a series of words beginning with *cl* and *cr*. The pupil notes in which order the words were dictated by writing in order the blends *cl* and *cr*.
5. The pupil may read aloud a series of printed words, and the teacher checks on the accuracy of his reading.
6. Label the petals of flowers with consonant blends and let pupils pick in order the various petals. The pupil gets to pick a petal only if he can give a word that begins with the same blend as that on the petal selected. The child with the most petals wins the game.



A similar exercise requires the pupil to spin a pointer on a wheel. The pupil gives a word beginning with the blend to which the pointer points.

7. A phonic wheel similar to the one illustrated in DeBoer and Dallmann* is useful in providing drill with the consonant blends. The wheel is made of two circles of tagboard. One circle is slightly smaller than the other and contains a small indentation. It is fastened at the center upon the larger circle. As the pupil turns the top circle, he meets various words beginning with the consonant blend to be studied.

Perhaps the best exercises are those that require the pupil to deal with words containing an initial consonant blend in the meaningful context of a sentence. The following sentences are illustrative:

* John J. DeBoer, and Martha Dallmann, *The Teaching of Reading*. (New York: Holt, Rinehart and Winston, Inc., 1960), p. 105.

1. Jan spills the jam on her dress.
2. Ned pulls his red sled up the hill.
3. The flag is passing. It is full of stars.
4. The club wants a small flag.
5. Peg puts the flag staff in the hall.
6. Tap, tap, tap goes the drum.
7. Jim snips and trims the grass.
8. Tom wants the tin snips to trim the grass.
9. Ted grips the fish at the gills.
10. Dad puts the hotdog on the grill.
11. Sam is still grinning.
12. Ted spins the red top.
13. Ted gives bran to the pig.
14. Tom spotted the brim of his hat.
15. Don fell off the cliff.
16. Dan has a bag full of plums.
17. Jim, bring the jam!
18. Jan has a scar on his leg.

Section A of Appendix I at the end of this chapter provides a list of stories, based on the monosyllabic vocabulary suggested in Figure 11-1 and in Chapter 10, that may be useful in teaching the beginning consonant blends.

Teaching the Ending Consonant Blends

After the child has learned to handle some of the beginning consonant blends, he is ready to learn the end consonant blends. Figure 11-2 contains a list of some common two-consonant endings.

The pupil cannot be expected to learn all of these at one time. How the teacher introduces them will depend on the vocabulary to which the pupil can react with meaning.

The pupil must learn to recognize the various *al* (òl) combinations in all, stall, bald, halt, malt, salt, scald, and small. He must learn the various *är* combinations as in garb, lard, scarf, arm, barn, carp, and art. He must learn the *a ** sound in calf, draft, fast, gasp, graft, grasp, half,

* The chief English words containing this sound are:

advance	blast	chandler	fasten	grasp	pass	slant
advantage	branch	chant	flask	grass	past	staff
after	brass	clasp	France	half	pastor	stanch
aghast	calf	class	Frances	halve	path	supplant
answer	can't	craft	Francis	lance	plant	task
ask	cask	dance	gasp	last	plaster	trance
aunt	casket	disaster	ghastly	lath	prance	vantage
avalanche	cast	distaff	giraffe	laugh	raft	vast
bask	caste	draft	glance	mand	rafter	
basket	castor	draught	glass	mask	rasp	
bath	castle	enchant	graff	mast	rather	
behalf	chaff	example	grant	master	sampler	
blanch	chancellor	fast	graph	nasty	shaft	

Figure 11-2. Common Double-Consonant Word Endings

act (akt)	elf (elf)	off (öf)*
aff (baff-baf)	ell (fell-fel)	oft (öft)*
aft (raft-raft)	elm (elm)	old (öld)*
alb (alb)	elp (help-help)	olf (wolf-wulf)*
alc (talc-talk)	elt (belt-belt)	olm (holm-höm)*
ald (bald-böld)	emp (hemp)	olt (bolt-bölt)*
alf (calf-kaf)	end (end)	omb (bomb-bäm)*
all (öl)	ens (lens-lenz)	omb (tomb-tüm)*
alm (balm-bäm)*	ent (lent-lent)	omp (romp-rämp)
alp (alp)	ept (wept-wept)	ond (fond-fänd)
alt (halt-hölt)	erd (herd-hard)*	ong (long-löng)*
amb (lamb-lam)*	erg (berg-bærg)*	ont (front-fänt)
amp (tamp-tamp)	erm (term-tærm)*	orb (örb)*
amp (swamp-swämp)*	ern (fern-færn)*	ord (ford-förd)*
and (and)	ert (pert-pært)*	orm (form-förm)*
ang (bang)	est (pest-pest)	orn (horn-hörn)*
anns (banns-banz)		ort (fort-fört)*
ant (ant)	iff (stiff-stif)	oss (toss-tös)*
apt (apt)	ift (lift-lift)	ost (lost-löst)*
arb (garb-gärb)	ild (wild-wild)*	
arc (ärk)	ilm (film-film)	uct (duct-däkt)
ard (lard-lärd)	ilt (hilt-hilt)	ull (dull-däll)
arf (scarf-skärf)	imb (climb-klīm)*	ull (pull-pul)
arl (marl-märl)	imp (limp-limp)	ulp (gulp-gälp)
arm (ärm)	ind (bind-bīnd)*	ult (cult-kält)
arn (barn-bärn)	ing (sing-sing)	umb (dumb-dæm)
arp (carp-kärp)	inn (in)	ump (dump-dæmp)
arr (parr-pär)	int (lint-lint)*	und (fund-tænd)
art (ärt)	ird (bird-bærd)*	ung (lung-læng)
asm (chasm-kaz'm)	irl (girl-gærl)*	unt (bunt-bænt)
asp (asp)	irm (firm-færm)	urb (curb-kærb)*
ass (ass)	irn (firn-firn)*	urd (curd-kærd)*
ast (last-last)	irt (girt-gært)	urf (surf-særf)*
att (batt-bat)	isc (disc-disk)	urg (burg-bærg)*
	ism (iz'm)	url (hurl-hærl)*
ebs (plebs-plebz)	isp (lisp-lisp)	urn (burn-bærn)*
ecs (specs-speks)	iss (miss-mis)	urp (burp-bærp)*
ect (sect-sekt)	ist (list-list)	urt (hurt-hært)*
eft (left-left)	itt (mitt)	ust (just-jæst)
eld (held-held)		utt (mutt-mæt)

* These should not be introduced at this time.

hasp, last, mast, pass, past, raft, and rasp. This generally is identified with the short *a*.

Figure 11-3 provides a list of numerous monosyllabic words that are phonetically consistent and that end in double consonants. If the word is in the child's speaking or listening vocabulary, there should be little hesitation in introducing the word in written or printed materials.

The teaching of the end-consonant blends should follow the principles outlined earlier. If the pupil has learned to associate the vowel with the initial consonant (ca-t), he should follow the same procedure. If, how-

Figure 11-3. Monosyllabic Words Containing Double Consonants at the End

Words that Have Been Formed From the Letters, M, T, B, H,
P, N, C, D, G, J, W, F, L, R, S, and the Short Vowels

act	calf*	fact	helm	pact	salt	stung
alb	cant	fang	help	palm*	sand	stunt
alms*	card	farm	hemp	pang	sang	sung
alp	carp	fast	hest	pant	scald	swang
and	cart	felt	hilt	pants	scalp	swept
ant	cast	fend	hint	parr	scant	swift
apt	clamp	film	hiss	part	scarf	swing
arc	clasp	Finn	hump	pass	scull	
arm	cleft	fist	hunt	past	sect	tact
arms	climb*	flint		pelt	self	talc
art	clump	flung	imp	pest	send	tamp
Art	clung	fond	inn	ping	sent	tang
asp	craft	font	ism*	plant	sift	tend
	cramp	front*		plump	silt	tent
	crest		jest	pomp	sing	test
bald*	crimp	gang	jilt	pond	slang	tilt
balm*	crisp	garb	jump	primp	slant	ting
band	crumb*	gasp	just	print	slept	tint
bang	crust	gilt		pulp	sling	tomb*
bard	cult	gland	lamb*	pump	slump	tramp
barn		glint	lamp	punt	slung	trend
belt	damp	golf	land	putt	small	trump
bend	darn	graft	lard		smart	trust
bent	dart	grand	last		smell	twang
best	deft	grant	lens	raft	smelt	twist
blast	dent	grasp	limb*	ramp	snarl	
blend	dint	grist		rang	sniff	want*
blest	disc	grunt	malt	rant	spasm	weld
blimp	draft	gulp	marc	rapt	specs	wend
blond	drift	gump	mast	rasp	spend	went
blunt	duct	gust	meld	rend	spent	wept
bomb*	dumb*		mend	rest	stamp	west
bond	dump	half*	mint	rift	stand	wind
brand	dung	hand	mist	ring	start	wing
bring	dust	harm	mitt	romp	stilt	wings
brunt	dwarf	harp	must	rump	sting	wisp
bump	dwelt	hasp		rung	stint	wolf*
bunt		hast	nest	runt	stomp	womb*
bust	end	held	numb*	rust	stump	

* These words should be learned as sight words: alms (ä'mz); bomb (bäm); calf (kaf); climb (klīm); crumb (krəm); dumb (dəm); front (frənt); half (haf); ism (iz'm); lamb (lam); limb (lim); numb (nəm); palm (pām); tomb (tüm); want (wänt or wönt); wolf (wülf); womb (wüm).

ever, he has associated the vowel with the sound that follows (c-at), it is important to adhere to the same method here. In this case learning of the endings given in Figure 11-2 will be particularly helpful. Exercises such as the following also will be useful:

1. The teacher says words ending in a single or double consonant and

asks the pupil to indicate by a predetermined method when the word ends with a consonant blend.

2. Ask the pupil to discriminate between the various ending blends, for example, *ng* and *nd*. The teacher may read a series of words ending in *ng* and *nd*. The pupil notes in which order the words were dictated by writing in order the blends *nd* and *ng*.
3. The pupil may read aloud a series of printed words and the teacher checks on the accuracy of his reading.
4. Another useful technique^{*} lists the initial consonant or consonant blends on slips of tagboard. These are attached to the left side of a larger card on whose right side is printed the double consonant ending that is being taught. Thus, the right part of the bottom card might contain the ending *end* and the slips of tagboard might have such beginning blends as *bl* (*bl-end*); *tr* (*tr-end*); and *sp* (*sp-end*).

Other beginning consonants in the example above might be: *b*(*bend*); *m*(*mend*); *r*(*rend*); *s*(*send*); *t*(*tend*); *w*(*wend*).

Section B of Appendix I to this chapter lists a series of sentences and stories that emphasize the end-consonant blends.

The Letters K & Q

In the letters *k* and *q*, the consonant blends *nk* and *sk*, and the speech consonant *ck* the pupil meets new phonic problems. The pupil needs to learn that certain sounds can be written in two ways. The much more common hard *c* and the *k* have the same sound. If the child remembers that the *k* sounds like all the *c* sounds he has met thus far, he should have little difficulty pronouncing the words correctly.

The letter *k* doesn't occur too frequently at the beginning of the word. In this position it is more commonly the letter *c*. However, the *k* is much more frequent than the *c* at the end of the word. This knowledge should be especially helpful in spelling.

The letter *q* occurs only in the combination *qu* and usually has the sound of *kw*. It also may be simply a *k* as in *liquor*. Occasionally, the *kw* sound is separated as in *liquid* (*lik'wid*). *Que* at the end of a word is simply a *k* sound.[†]

Figure 11-4 lists some common monosyllabic words illustrating the *k*, *ck*, *nk*, *sk*, and the *qu* sounds.

An analysis of these words show that most of them are phonetically consistent. The following rules, however, must be applied:

^{*} See DeBoer, and Dallmann, *The Teaching of Reading*, p. 105.

[†] It may be desirable to introduce the pupil to the *gu* combination at this time. Examples are: guard, guess, guest, guide, guilt, guardhouse, guilty, guitar, intrigue, safeguard. The *gu* in penguin is pronounced *gw*.

Figure 11-4. Monosyllabic Words Formed with K and Q and the Previously Learned Consonants and Vowels

ark	crock	hock	knell	park	rock	speck
ask		honk	knit	peck		spunk
	dark	hulk	knob	pick	sack	stack
back	deck	husk	knock	plank	sank	stalk ^o
balk ^o	Dick		knoll ^o	pluck	sick	stark
bank	disk	ilk	knot	plunk	silk	stick
bark	drank	ink		prank	skid	stink
bask	drink		lack	prick	skiff	stock
beck	duck	junk	lark	punk	skill	stuck
black	dunk		lock		skim	stunk
blank	dusk	keg	luck	quack	skin	sulk
blink		kept		quaff	skip	swank
brink	elk	kick		quart	skit	
brisk		kid	mark	quell	skulk	tack
buck	flank	kill	mask	quest	skull	talk ^o
bulk	flask	kiln ^o	milk	quick	skunk	tank
	flunk	kilt	mink	quill	slack	task
calk ^o	folk ^o	kin	monk	quilt	slick	tick
cask	frank	king	muck	quit	slink	trek
click	Frank	kink	musk		smock	trick
clink	frisk	kiss		rack	snack	
cluck		kit	nick	rink	sock	walk ^o
crick	hack	knack	Nick	risk	spank	wick
						wink

^o Balk (bök); calk (kök); folk (fök); kiln (kil, kiln); knoll (nöl); stalk (stök); talk (tök); walk (wök).

1. The speech consonant, *ck*, at the end of the word, preceded by a short vowel, is simply *k* as, for example, in back, click, cluck, crick, crock, deck, Dick, duck, hack, hock, lack, lock, luck, nick, peck, pick, pluck, prick, rock, sack, sick, slack, slick, snack, sock, speck, stick.
2. *Ank* is *angk* as in bank, blank, drank, flank, frank, plank, prank, sank, spank, swank, and tank.
3. *Ink* is *ingk* as in kink, blink, brink, clink, drink, ink, pink, mink, rink, stink.
4. *Unk* is *ængk* as in bunk, dunk, flunk, junk, plunk, punk, skunk, spunk, stunk.
5. *Onk* is *ängk* as in honk or *ængk* as in monk.
6. *Kn* is simply an *n* as in knack, knell, knit, knock, knob, knoll, and knot. *Gn* is simply *n* as in gnash, gnat, and gnaw.
7. *Iss* is *is* as in kiss; *iff* is *if* in skiff; *ill* is *il* as in skill; *aff* is *af* as in quaff; *ell* is *el* as in quell.
8. A when followed by *r* as in ark, bark, dark, lark, mark, park, stark, and quart is the *ä* sound.

Appendix I, Section C, at the end of this chapter provides materials to accompany the teaching of the *k* and *qu* sounds.

The Long Vowels

Up to this time, with the exception of the *ä* sound in the *ar* sounds, we have spoken only of the short vowels. We have mentioned the short *a*

sound as in *hat*, the short *e* sound as in *met*, the short *i* sound as in *bit*, the short *o* sound as in *hot*, and the short *u* sound as in *hut*. The pupil also needs to learn the long *a* sound as in *fate* and *stare*; the long *e* sound as in *fete*; the long *i* sound as in *bite*; the long *o* sound as in *so*, *in off*, and *in orb*; and the long *u* sound as in *use* and *lute*. In *use* the *u* is pronounced as *yü* and in *lute* it is pronounced as *ü*. The former sound occurs regularly after *b*, *c*, *f*, *g*, *h*, *k*, *m*, *p*, and *v* and at the beginning of a word. After the other consonants usage varies. The *ü* sound is common after *j*, *r*, and *l* when these consonants are preceded by another consonant as in *brute*. The pupil also must learn the sound of *u* in such words as *fur*.

Since the short vowel occurs much more frequently than the long vowel, the pupil customarily should sound the vowel as a short sound. If the word thus formed does not sound like a word that he already knows or if it doesn't make sense in the context, then another attempt must be made.

There are three principles that may help more advanced pupils in arriving at the correct word. These principles are the principle of variability, the principle of position, and the principle of silentness.

THE PRINCIPLE OF VARIABILITY

The principle of variability simply means that the pronunciation of the written vowel may change from one word to another. The *e* sound may be short as in *bed*, or long as in *he*. The pupil gradually must learn and apply the following variations:

<i>a</i>	<i>e</i>	<i>i</i>	<i>o</i>	<i>u</i>	<i>y</i>
a (hat)	e (bed)	i (bit)	ä (lot)	ə (hut)	y (crypt)
ā (fade)	ē (fete)	ī (bite)	ō (so)	yü (use)	y (cry)
ä (car)			ô (off)	ü (lute)	
e (ə) (care)			ö (orb)	ü (pull)	

THE PRINCIPLE OF POSITION

The second principle to be learned is the principle of position. The sound of the vowel changes depending upon its position in the word.

After the pupil has mastered the sound of vowels in the beginning or medial position in monosyllabic words, he should be ready to deal with the short sound of the vowel in one-syllable words in which a single vowel beginning the word is followed by a single consonant: for example, *am*, *an*, *as*, *at*, *Ed*, *if*, *in*, *is*, *it*, *of*, *on*, *up*, and *us*.^{*} The first vowel

^{*} Or is an exception. Note that the rule is valid only if a single consonant follows, although the *e* in *egg* is short. The *o* in *off* is long.

rule then may be stated thus: *A single vowel at the beginning or in the middle of a one syllable word usually is short.*

The pupil also must learn the long vowel sounds. He first should learn that long vowels generally have the same sound as that indicated by their names. The vowel receives a long sound when a single vowel comes at the end of a one-syllable word: for example, a, be, he, she, me, we, I, go, ho, no, so, by, cry, fly, fry, my, ply, pry, sky, sly, spry, spy, sty, try, why, wry.* A second rule may be stated thus: *A single vowel at the end of a one-syllable word usually is long.* This rule is readily applied and is easily learned. It occurs only in the few words listed above. The child learns best when lists of words exemplifying the various vowel rules are presented and he is asked to indicate which rule applies.

Sometimes the vowel occurs in the middle of a word but does not follow the principle of position. The vowel is a long vowel.

long i—blight,† bright, fight, flight, fright, high, knight, light, might, nigh, night, plight, right, sigh, sight, slight, thigh, tight; bind, blind, find, grind, hind, kind, mind, rind, wind; child, mild, wild; pint; climb. †

long o—bold, cold, fold, gold, hold, mold, old, scold, sold, told; boll, droll, knoll, poll, roll, toll, scroll, stroll; bolt, colt, jolt; gross; ghost, host, most, post; both; comb; don't, won't.

Frequently the *o* has the *ö* sound of *o* and it occurs in the following words: log; broth, cloth, froth, moth; boss, cross, dross, floss, gloss, joss, loss, moss, toss; cost, frost, lost; gong, long, prong, song, strong, throng, tons; honk; off, scoff; loft, oft, soft; cough, trough.

THE PRINCIPLE OF SILENTNESS

The third principle to be learned is that of silentness. Some vowels in words are not pronounced. When the letter *e* comes at the end of a monosyllabic word, it frequently is silent. In addition, the normally short sound in the middle of the word becomes a long vowel. A third rule may be stated thus: *In one-syllable words in which there are two vowels, the second one being a silent e preceded by a single consonant, the initial vowel is long.* Since the pupil has heard and spoken many monosyllabic words that exemplify this rule, it is desirable to consider such words next. Figure 11-5 lists words that follow this principle.

* Exceptions are: *ha, do, to, and who*. These really are not exceptions to the rule, since the vowels are long, but the words are not phonetic.

† The *gh* is silent—common two-syllable words with long *i* and silent *gh* are: brightness, highness, lightness, higher, highest, highway, lightning, midnight, flash-light, delight, tonight, overnight, mighty, moonlight, and sunlight.

‡ The letter *b* is silent.

Figure 11-5. *Monosyllabic Words With a Silent E at the End and a Long Vowel Sound in the Middle of the Word*

ape	crate	flame	Kate	name	rake	smote	tone
are*	crime	flare	kite	nape	rape	snake	tore
ate	crude	fluke		nine	rare	snare	tote
	cruse	fuse	lake	node	rate	snipe	trade
babe	cube		lame	none*	ride	snore	tribe
bade	cute	gale	lane	nose	rife	sole	tripe
bake		game	late	note	rile	some*	tube
bale	dame	gape	life	nude	rime	sore	tone
bane	Dane	gate	line		ripe	spade	twine
bare	dare	give*	lobe	ode	rise	spare	
base	date	glade	lode	one*	rite	spate	vale
bate	dime	glare	lone	ore	robe	spike	vane
bibe	dine	gone*	lore		rode	spine	vile
bide	dire	gore	lube	pale	role	spire	vine
bike	dome	grate	lure	pane	rope	spite	vise
bile	done*	grime	lute	pare	rude	spore	vote
bite	dope	gripe		Pete	rule	spume	
blade	dose	grobe	made	pike		stake	wade
blame	dote		make	pile	safe	stale	wake
blare	dove*	hall	mane	pine	sake	stare	wane
bone	drape	hare	mare	pipe	sale	stile	ware
bore	drove	hate	mate	plane	sate	stipe	waste
bride	dude	have*	mere	plate	scale	stoke	were*
brine	duke	here	mete	plebe	scape	stole	wide
brute	dupe	hide	Mike	plume	scare	store	wife
		hike	mike	poke	scope	sure	wile
cake	eke	hire	mile	pole	sere	swine	wine
came		hole	mine	pope	shake	swipe	wipe
cane	fade	home	mire	pose	side		wire
cape	fake	hone	mite	prime	sire	take	wise
care	fame	hope	mode	probe	site	tale	
chore	fare	hose	mole	prone	skate	tame	yoke
clove	fate		mope	prose	slate	tape	Yule
code	fete	jade	more	prune	slide	tide	
coke	fife	Jane	mote	pure	slime	tike	
come*	file	jibe	move*		slope	tile	
cone	fine	joke	mule	quite	smile	time	
cope	fire	Jude	muse	quote	smite	tire	
core	flake	June	mute		smoke	tome	

* These are exceptions and should be learned by sight. In summary, these are: are (är), come (kəm), done (dən), dove (dəv), give (giv), gone (gɒn), have (hav), move (müv), none (nən), one (wən), some (səm), and were (wər). O frequently is a short u as in some, come, dove, love, done, none, one.

A new sound occurs in the following words: bare, blare, care, dare, fare, flare, glare, hare, mare, pare, rare, scare, snare, spare, stare, and ware. This *a* e(ə) is a more open sound than the long *a* sound and occurs commonly in accented syllables and/or in conjunction with the *r* sound. There is no great need to distinguish it for the pupil from the long *a* sound.

The pupil must learn further extensions of the principle of silentness.

In certain vowel combinations, for example, *ai*, *ay*, *ea*, *ee*, *oa*, *oe*, *ow*, the second letter may be silent and the first is long. Here are various monosyllabic words that follow this rule:

<i>Ai</i> as <i>ā</i>	paid	flay	feel	seem	croak	does*
aid	pail	gay	feet	seen	float	foe
aide	paint	hay	flee	seep	foal	goes
ail	pair	may	fleet	sleek	foam	hoe
aim	plaid*	nay	free	sleep	gloom	Joe
ain't	plaint	play	geese	sleet	gloat	shoe*
air	praise	pray	Greek	sneer	goad	toe
aisle*	quail	ray	green	speed	goal	whoe
bail	quaint	say	greet	steed	goat	
bait	raid	says*	heed	steel	groan	<i>Ow</i> as <i>ō</i>
braid	rain	slay	heel	steep	hoar	blow
brail	raise	stay	jeep	steer	hoard	bow
brain	said*	tray	jeer	sweep	hoarse	bowl
claim	sail	way	keel	sweet	load	crow
drain	saint		keen	teem	loaf	flow
fail	slain	<i>Ee</i> as <i>ē</i>	keep	teens	loam	flown
faile	snail	bee	knee	tree	loan	glow
fain	staid	beech	kneel	tweed	moan	grow
faint	stain	beef	leek	tweet	moat	grown
fair	stair	been*	lees	wee	oak	know
flail	tail	beer	meet	weed	oar	low
flair	taint	beet	need	week	oat	mow
gain	trail	bleed	peek	weep	road	owe
gait	train	breed	peel		roam	own
hail	trait	creed	peep	<i>Oa</i> as <i>ō</i>	roan	row
hair	waif	creek	peer	boar	roar	show
jail	wail	creel	preen	board	roast	slow
laid	waist	creep	queen	boast	soak	snow
lain	wait	creese	queer	boat	soap	stow
lair		deed	reed	broad*	soar	throw
maid	<i>Ay</i> as <i>ā</i>	deem	reef	cloak	toad	tow
mail	aye*	deep	reek	coal	toast	
maim	bay	deer	reel	coarse		
main	clay	eel	see	coast	<i>Oe</i> as <i>ō</i>	
maize	day	feed	seed	coat	doe	

Aisle (īl); plaid (plad); said (sed); aye (ī); says (sez); been (bin); broad (brōd); does (dōz); shoe (shū); the *ee* followed by *r* is always *i*(ē).

The list of words in Figure 11-6 contains three exceptions for the *ai* combination: aisle, plaid, and said. When *ai* is followed by an *r*, as in air, chair, fair, flair, hair, lair, pair, and stair, the *a* is the *e*(ē). It is the same *a* that is met in the words bare, blare, care, dare, fare, flare, glare, hare, mare, pare, rare, scare, spare, stare, and ware. It will be met in such two-syllable words as haircut, hairdo, impair, and hairpin.

The *ay* combination has a long *a* sound except in aye and says. The *ee* combination is pronounced as long *e* except in the word been. The words, beer, cheer, deer, jeer, peer, queer, sheer, sneer, steer, and veer, have the *i*(ē) sound. This a lowered long *e* sound and occurs only in conjunction with *r*. It does not have to be taught as a distinct sound.

The *oa* combination is sounded like a long *o*. Only the word broad

(brød) in the above list of words does not follow the rule. The *oe* combination also is sounded like a long *o*. The following words do not follow this pattern: does, shoe, snowshoe, canoe, and horseshoe.

The *ow* combination is listed here because it follows the general principle of silentness. In *ow*, the *w* is not pronounced and the *o* is given its long sound.

The principle of silentness also applies to certain words having an *ea* combination. This group of words is by far the least consistent. The pupil will have to learn many of the words as sight words. In attacking words with the *ea* combination the pupil's best guess is the long *e* sound. He must learn that break and steak are pronounced as brāk and stāk. The ending *ear* may be pronounced four ways: as *i(ə)* in beard, clear, dear, ear, fear, gear, hear, near, rear, sear, shear, smear, and spear; as *e(ə)* in bear, pear, swear, wear; as *ə* in dearth, earl, earn, earth, hearse, and pearl; and as *ä* in heart and hearth. In diagrammatic form the various pronunciations for *ea*, omitting the long *e* sound, may be categorized thus.

Ea°					
Ea		Ear			
e	ā	i(ə)	e(ə)	ə	ä
bread	great	clear	bear	earl	heart
breadth	break	dear	pear	dearth	hearth
breast	steak	beard	swear	earn	
breath		ear	wear	earth	
dead		fear		hearse	
deaf		gear		pearl	
dealt		hear		search	
death		near			
dread		rear			
dreamt		sear			
head		shear			
health		smear			
lead		spear			
meant		tear			
read					
realm					
spread					
stealth					
sweat					
thread					
threat					
tread					
wealth					

* Some two-syllable words with *ea* pronounced as short *e* are: abreast, headache, ahead, already, baldhead, behead, blockhead, breakfast, bullhead, deadbeat, deaden, deadeye, deadly, deafen, deafmute, dreadful, feather, headlight, headlong, headstrong, healthful, healthy, heaven, heavy, hothead, instead, jealous, leather, meadow, measure, pleasant, peasant, pleasure, ready, redhead, retread, steady, sweater, threaten, weapon, weather, wealthy. In heartbreak and heartburn it is *ä*. In imperial, learned, rehearse, searching, unearth, and research it is *ə*.

The following *ea* combinations are pronounced as long *e*:

beach	cleave	gleam	leak	plea	seat	teach
bead	creak	glean	lean	plead	sheaf	team
beak	cream	grease	leap	please	sheath	tease
beam	crease	greave	lease	pleat	sheathe	treat
bean	deal	heal	leave	preach	sheave	veal
beast	dean	heap	meal	reach	sleave	weak
beat	dream	heat	mean	read	sneak	weal
bleach	each	heath	neat	ream	speak	weave
bleak	ease	heave	pea	reap	squeal	wheat
bleat	east	jean	peace	reave	stead	wreak
breach	eat	knead	peach	scream	steal	wreath
breathe	feast	lea	peak	scream	steam	wreathe
cheap	feat	lead	peaked	sea	streak	
clean	flea	leaf	peal	seal	stream	
cheat	freak	league	peat	seam	tea	

Teaching the Vowels

In teaching the vowels the child initially looks at a picture, pronounces its name, and identifies the short sound. The teacher may ask: "What vowel sound occurs in the word *cat*? In the word *bell*?"

Next the pupil should be taught to discriminate between the short and the long vowel. What sound occurs in the word *mule*? In the word *go*? Are these short sounds or long sounds? Why? The teacher asks the child to look at words like *came*, *flame*, and *dame*. How many vowels are pronounced? Which vowel is silent? What happens to the first vowel when the *e* is silent and is preceded by a single consonant?

Exercises such as the following are especially helpful in teaching the vowel sounds.

1. Let the pupils encircle the long vowels in a simple rhyme.
2. Have them turn words such as *at*, *bad*, *ban*, *bat*, *bib*, *bid*, *cam*, *can*, *cap*, *cod*, *cop*, *cub*, *cut*, *dam*, *Dan*, *dim*, *din*, *dot*, *fat*, *grim*, *grip*, *hat*, *hid*, *hop*, *Jan*, *kit*, *mad*, *man*, *mat*, *met*, *mop*, *nap*, *not*, *pal*, *pan*, *pin*, *pip*, or *pop* into other words by adding an *e*.
3. Provide a list of words with the long vowel missing and let them add it: *b_*; *cr_*; *pl-te*; *b_ke*; *c_ke*; *c_ne*; *d_me*.
4. Provide exercises like the following:

1. (*at*, *ate*)

He at home.

He is home.

2. (*can*, *cane*)

He do it.

He walks with a

3. (*fat*, *fate*)

He is

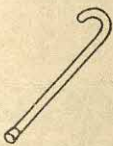
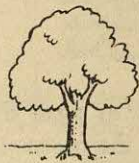
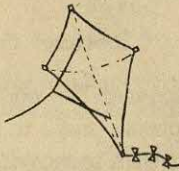
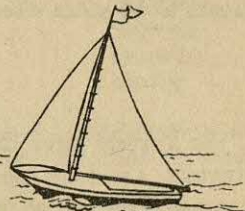
It was his

4. (not, note)

He is at home.

He gave me a

5. Have pupils indicate by number the picture that has the same vowel sound as the word.

			
1.	2.	3.	4.
so <u>4</u>	Jane _____	snake _____	
ape _____	life _____	slime _____	
bike _____	here _____	slope _____	
coke _____	rake _____	feet _____	

Since the long sound of *y* has been introduced in words like *cry*, *fly*, *my*, etc., the pupil should be taught the difference between the long and short *i* sound of *y*. The following words are helpful in demonstrating this: *bye*, *dye*, *dyke*, *pyre*, *rhyme*, *rye*, *style*, *tyke*, *type*, *crypt*, *myth*, and *rhythm*.

The pupil, besides learning to discriminate between long and short vowels, needs to learn how to designate long and short vowels and how to indicate silent letters. An exercise like the following teaches this:

āṭḡ	blow	hay	fan
hot	got	duke	jail
dīnḡ	soap	bed	see
gō	sleep	fun	rake
get	joke	fame	brute
fēṣṭ	tube	Brad	name
cut	bike	sat	like

After the discrimination between the short and long vowels has been learned, the pupil is ready to learn something about the rules and gen-

eralizations that govern sounding. The child should see how the rule fits the words that he has learned. He should be asked to provide other words that follow the same rule.

Perhaps the sound of the individual vowels is best learned through practice with actual words. However, the rules and principles have their value. In fact, generalizations are not necessarily learned best inductively. If this were so, many theories would forever elude us. Sometimes, it seems to be more effective to state the generalization explicitly.

Structural Endings

We already have discussed the ending *s* to form the third personal singular, *s* to form the plural, and *s* to form the possessive case. We have examined the use of *ing* with monosyllabic words ending in a single consonant and preceded by a single vowel.

Thus, the pupil should be able to handle the doubling of the final consonant, both in spelling and in reading. In reading, only one consonant is pronounced. Some common examples are:

begging	dotting	humming	quitting	sobbing
betting	dripping	kidding	rippling	spinning
bragging	fibbing	nagging	running	spitting
cutting	grabbing	planning	skimming	stabbing
digging	grinning	plotting	snapping	swimming

ADDITIONAL RULES FOR ING

The pupil also needs to expand his uses for *ing*. Whenever *ing** is added to monosyllabic words ending in a vowel, diphthong, or double vowel (being, playing, fleeing, hoeing), to monosyllabic words ending in a single consonant preceded by a double vowel (aiding), to monosyllabic words ending in a double consonant (arming), or to words ending in *ow* (blowing), no doubling of the letter preceding *ing* occurs. Monosyllabic words ending in a silent *e* drop the final *e* before adding *ing* (bake-baking). The first vowel receives its long sound in reading.

The principles suggested apply not only to *ing* but to any suffix beginning with a vowel. The most common such suffixes are: able, ably, ability, age, ance, ant, ard, ary, ation, ed, en, ence, ent, er, ern, ery, es, est, ion, ish, ity, ive, or, ous, and y. Words ending in *ce* or *ge* retain the *e* before a suffix beginning with *a* or *o*.

The lists of words provided below illustrate these principles in all of their applications.

* Vowels before *ng* are always short.

1. When *ing* is added to monosyllabic words ending in a vowel, diphthong, or double vowel and to words ending in *ow*, no doubling of the letter preceding the *ing* occurs.

being	flaying	freeing	growing
doing	playing	seeing	knowing
going	praying	hoeing	mowing
crying	saying	shoeing	rowing
flying	slaying	blowing	showing
frying	spraying	bowling	slowing
prying	staying	crowing	snowing
spying	straying	flowing	throwing
trying	fleeing	glowing	towing

2. When *ing* is added to monosyllabic words ending in a single consonant preceded by a double vowel, no doubling of the letter preceding the *ing* occurs.

aiding	breeding	boasting	eating
ailing	creeping	boating	gleaming
aiming	deeming	coasting	healing
airing	feeding	croaking	heaping
bailing	feeling	floating	hearing
baiting	fleeing	foaming	heating
braiding	greening	gloating	leading
chaining	greeting	goading	leaking
claiming	heeding	groaning	leaning
draining	jeering	hoarding	leaping
failing	keeping	loading	nearing
fainting	kneeling	loafing	peaking
flailing	meeting	loaning	pealing
gaining	needing	moaning	pleading
hailing	peeking	roaming	preaching
jailing	peeling	roaring	reading
mailing	peeping	roasting	reaping
maiming	reeling	soaking	rearing
nailing	seeding	soaping	screaming
painting	seeming	soaring	sealing
pairing	seeping	toasting	smearing
raiding	sleeping		sneaking
raining	sleeting	beaming	speaking
sailing	sneering	beating	spreading
staining	speeding	breaking	squealing
trailing	steering	cleaning	stealing
training	sweeping	clearing	steaming
wailing	teeming	cheating	swearing
waiting	weeding	creaking	sweating
		dealing	treating
bleeding	boarding	dreaming	wearing

3. When *ing* is added to monosyllabic words ending in a double consonant, no doubling of the consonant before *ing* occurs.

arming	banding	blasting	branding
asking	barking	blending	bringing
balding	bending	bossing	bucking

bumping	huffing	punting	walking
busting	hunting	purring	wanting
clanging	jesting	quacking	willing
clasping	kicking	quitting	
clinging	killing	risking	fighting
clicking	kissing	rocking	knighting
costing	knocking	rushing	lighting
denting	lacking	salting	sighing
dressing	landing	selling	sighting
drifting	lasting	sending	slighting
drilling	locking	sifting	binding
drinking	lulling	singing	blinding
ducking	marking	smelling	finding
dusting	mending	snacking	grinding
ending	milking	sniffing	minding
falling	milling	spelling	winding
farming	missing	spending	
filling	mulling	stamping	holding
flinging	panting	standing	molding
forming	parking	starting	scolding
granting	parting	sticking	
grasping	passing	stinging	polling
grilling	pecking	swinging	rolling
grunting	picking	talking	
gusting	planting	telling	bolting
harming	plucking	tending	jolting
helping	puffing	ticking	
hissing	pulling	twisting	

4. When *ing* is added to monosyllabic words ending in a silent *e*, the *e* is dropped before adding *ing*.

baking	firing	making	roping
biting	freezing	moping	saving
blaming	giving	moving	sealing
coming	greasing	naming	sliding
coping	gripping	owing	smiling
craving	hating	paving	smoking
curing	hiding	pleasing	sneezing
dating	hoping	poking	taking
dining	joking	posing	teasing
diving	leasing	praising	wading
dosing	leaving	raising	wasting
driving	loving	riding	
filig	living	rising	

THE PAST TENSE WITH ED

The pupil also must be introduced to the past tense formed by *ed*. In reading *ed* the child meets certain problems. The *e* is silent (begged, canned) except after *d* and *t* (batted, nodded). The *d* is pronounced as

a *t* after the voiceless consonants such as *c*, *ch*, *f* (puffed), *h*, *k* (peeked), *p* (dipped), *s*, *sh* (wished), *t*, *th*, or *wh*. The past participle of *dream*, *learn*, and *spell* may be pronounced with a *t* or a *d* sound.

The following lists of words exemplify the rule:

1. The *e* in *ed* is silent except after *d* and *t*:

aided	dusted	lasted	seeded
batted	ended	leaded	sifted
blasted	feasted	mended	skidded
blended	fitted	minded	speeded
blinded	floated	nodded	started
blotted	folded	padded	tended
boarded	gifted	panted	toasted
boasted	granted	parted	trusted
braided	greeted	patted	tufted
branded	grunted	petted	twisted
busted	gusted	planted	waded
cheated	hated	pleaded	waited
coasted	heated	plotted	wanted
dated	heeded	punted	wasted
dented	hunted	roasted	weeded
dotted	jested	salted	
drifted	landed	scolded	

2. The *d* is pronounced as a *t* after soft *c*, *ch*, *f*, *h*, *k*, *p*, *s*, *sh*, *t*, *th*, and *wh*:

<i>p</i>			<i>ch</i>
bumped	slipped	parked	
clapped	snapped	peaked	lunched
clasped	soaped	peeked	preached
clipped	stamped	pecked	
coped	stopped	picked	<i>s</i>
dipped	tapped	plucked	bossed
dripped	tipped	poked	dosed
flapped	<i>k</i>	quacked	dressed
grasped	asked	risked	greased
gripped	baked	rocked	hissed
gripped	barked	smoked	kissed
heaped	bucked	snacked	leased
helped	clicked	sneaked	missed
hoped	creaked	soaked	passed
leaped	ducked	talked	pleased
moped	joked	ticked	posed
nipped	kicked	walked	praised
reaped	knocked	<i>f</i>	raised
ripped	lacked	huffed	teased
roped	leaked	loafed	
skipped	locked	puffed	<i>sh</i>
slapped	marked	sniffed	rushed
	milked	stuffed	wished

THE PLURAL WITH ES

Finally, the pupil must learn to form the plural of words by adding *es*. So far he has learned only a few words in which the plural is thus formed: namely, those words ending in *s*. Words ending in *x*, *z*, *ch*, and *sh* (*ce*, and *ge* keep the *e*) follow the same pattern. Some common words are: box, dish, fox, brush, inch, lunch, mix, match, fish, teach.

In pronouncing the *es* ending, the *e* is silent in the third person singular verbs (goes, hoes) and in the plural of words (stones) except after sibilants. In the latter (horses), the *e* is pronounced.

The Letters V, X, Y, Z

The four letters *v*, *x*, *y*, *z* commonly are the most difficult for the child to learn. The letter *x* spells six different sounds. Generally, it is either the *ks* or the *gz* sounds. When *x* follows a vowel that is accented as in *exit* or when a consonant sound follows the *x*, the *x* is sounded as a *gz*. When *x* is in the initial position in a word it usually is pronounced as *z* (xylophone). In the middle and final position it commonly is *ks*. When preceded by *e* it is simply *x*. It also is pronounced as *gksh* (anxious), *gzh* (luxurious), and *gsh* (anxious).

The consonant *y* is a palatal semivowel corresponding to the German *j* sound. It occurs only before vowels.

The letter *z* has two pronunciations: *z* and *zh*. The *v* has only one sound.

The pupil must become familiar with the sounds represented by these letters by familiarizing himself with words that contain them. The following lists of words illustrate the various sounds:

V sound: brave, breve, cave, clove, cove, crave, curve, dive, dove, drive, drove, Eve, eve, five, gave, give, grave, have, heave, hive, hives, jive, knave, live, love, move, pave, peeve, prove, rave, rove, save, salve, selves, sleeve, solve, starve, stove, vail, vain, vale, value, van, vane, vase, vast, vat, veal, veer, veil, vein, vend, vent, verb, vest, vet, vex, vie, view, vile, vim, vine, vise, vogue, voice, void, volt, vote, vouch, waive, wave, wives, wove.

Ks sound of x: ax, box, coax, fix, fox, flax, flex, flux, hex, hoax, jinx, lax, Max, mix, next, ox, pix, pox, pyx, Rex, sex, six, tax, text, vex, wax.

Y sound: yacht, yak, yams, yank, yap, yard, yarn, yawn, yea, year, yearn, yeast, yegg, yell, yelp, yen, yes, yet, yield, yip, yoke, yolk, yond, you, young, your, youth, yowl, yule.

Z sound: adz, blaze, breeze, bronze, buzz, craze, daze, doze, faze, fez, fizz, freeze, frieze, froze, fuzz, gauze, gaze, glaze, graze, haze, jazz, phiz, prize, quiz, raze, razz, size, sneeze, snooze, squeeze, waltz, wheeze, zeal, zest, zinc, zing, zip, zone, zoo, zoom.

The Speech Consonants: ch, sh, th, wh, gh, ph

The pupil already has had experience with two letters having one sound, especially with *ck* and *qu*. Now we extend this principle to the speech consonants, *ch, sh, th, wh, gh, and ph*.

THE DIGRAPH CH

The digraph *ch* may have four distinct sounds: *ch, j, sh, and k*.^{*} The unvoiced *ch* is a combination of *t* and *sh*. Sometimes it is pronounced as a voiced *j*, as in *spinach*. It is equivalent to *sh* in words of French derivation such as *cache, chagrin, chef, Chicago, creche, gauche, machine, machinery, and mustache*. It has a *k* sound in some words derived from the Greek and Hebrew as *chasm, choir, chorus, Christ, chrism, Christmas, chrome, Enoch, and scheme*, and also in *ache, school, and Czech*. In *drachm, schism, yacht, and fuchsia* the *ch* is silent. Here are some common words exemplifying the regular *ch* sound:

arch	change	chin	couch	leach	preach	squelch
batch	chant	chip	crotch	leech	punch	stanch
beach	chap	chirp	crutch	lunch	quench	starch
beech	charge	choice	ditch	lurch	ranch	staunch
belch	charm	choke	drench	march	reach	stench
bench	chart	choose	dutch	match	retch	stitch
birch	chase	chop	each	mooch	rich	stretch
bleach	chaste	chore	etch	much	roach	switch
blotch	chat	chose	fetch	mulch	scorch	teach
botch	cheap	chow	filch	munch	scotch	thatch
branch	cheat	chuck	flinch	notch	scratch	torch
breach	check	chug	flitch	ouch	screech	touch
breech	cheek	chum	French	parch	scrunch	trench
broach	cheer	chunk	grouch	patch	search	twitch
brooch	cheese	church	gulch	paunch	sketch	vetch
bunch	chess	churl	hatch	peach	slouch	vouch
catch	chest	churn	haunch	perch	smirch	watch
chaff	chew	chute	hitch	pinch	smooch	welch
chain	chick	cinch	hunch	pitch	smutch	winch
chair	hide	clench	inch	poach	snatch	witch
chalk	chief	clinch	itch	pooch	snitch	wrench
champ	child	clutch	latch	porch	speech	wretch
chance	chill	coach	launch	pouch	splotch	

THE DIGRAPHS SH AND TH

The digraph *sh* presents no special reading difficulties. Some common words exemplifying the sound are:

^{*} This is another way of saying that the *ch, j, sh, and k* sounds can be spelled as *ch*. For a complete listing of multiple spellings of consonants see Appendix I at the end of the book.

ash	mesh	share	shell	shop
bash	mush	shark	sherd	shorn
brash	plush	sharp	shield	short
brush	rash	shave	shift	should
bush	rush	shawl	shin	shout
cash	sash	shay	shine	shove
clash	shade	she	ship	show
dash	shaft	sheaf	shirk	shun
dish	shag	shear	shirt	slash
fish	shake	sheath	shoal	slush
flush	shale	sheathe	shoat	smash
fresh	shall	sheave	shock	smutsh
frosh	shalt	shed	shod	splash
gnash	sham	sheen	shoe	squash
harsh	shame	sheep	shone	trash
hush	shank	sheer	shoo	wish
josh	shan't	sheet	shook	
lash	shape	shelf	shoot	

The *th*, on the other hand, may be the voiceless *th* or the voiced *th*. The final *th* usually is voiceless except in booth, mouth, smooth, with, and in *the* endings as, for example, in bathe. Some verbs (mouth, bequeath, and smooth) have dropped the final *e* but still follow the rule. Some nouns with a voiceless singular (mouth) have a voiced plural. Generally when the final *ths* is preceded by a short vowel sound (deaths) or by a consonant (months), it is unvoiced. The words, cloths, truths, youths, and wreathes, may have either. Initial *th* in such words as the, them, there, this, and thither, is voiced. *Th* in Thomas, Esther, and Thompson is simply a *t*.

The following words illustrate the *th* sound in monosyllabic words:

Voiceless *th*

bath	fourth	strength	thought	thump
berth	froth	teeth	thrash	thus
birth	growth	thank	thread	thwart
booth	hath	thatch	threat	tooth
breadth	health	thaw	three	truth
breath	hearth	theft	thresh	twelfth
broth	heath	theme	threw	warmth
cloth	mirth	thick	thrice	wealth
couth	mouth	thief	thrift	width
dearth	myth	thigh	thrill	worth
death	ninth	thin	throat	wraith
depth	north	thing	throb	wrath
doth	oath	think	throng	wreath
earth	sixth	third	through	youth
faith	sloth	thirst	throw	
fifth	Smith	thong	thrush	
filth	sooth	thorn	thrust	
forth	south	thou	thud	

Voiced th

baths	smooth	their	these	though
bathe	soothe	them	they	thy
breathe	that	then	this	with
clothe	the	thence	those	wreath
scathe	thee	there	thou	writhe
scythe				

THE DIGRAPHS WH, GH, PH

The combination *wh* may be pronounced as *hw* or simply as *h*. The combination, *gh*, may be pronounced as a simple *g*; it may be an *f*; or it may be silent. We have seen that in the combination *igh* the *gh* is silent. *Ph* commonly is an *f* sound. It also may be sounded as *v* (Stephen), as a *p* (diphthong, diphtheria, naphtha), or it may be silent (phtalin).

Here are words that illustrate the observations just made:

Wh sound—whack, whale, wharf, what, wheat, wheel, wheeze, whelm, whelp, when, whence, where, whet, whew, (hwu, hu), which, whiff, whig, while, whilst, whim, whine, whip, whirl, wish, who (hü), whoa, whole (höl), whom (hüm), whoop (hüp), whose (hüz), why.

Silent Gh—aught, bough, bought, brought, caught, dough, drought, eight, freight, height, light, naught, neigh, night, nought, ought, plough, sleigh, sought, straight, though, thought, through, weight, wrought.

Gh as *f*—cough, draught, laugh, rough, slough, tough, trough.

Gh as *g*—ghost, ghoul.

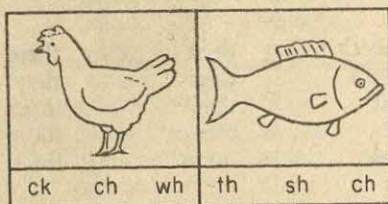
Ph as *f*—phase, phew, phlegm, phone, phrase.

TEACHING THE SPEECH CONSONANTS

The pupil needs to learn the speech consonants both at the beginning of a word and at the end of a word. He must learn to discriminate between the various sounds used for the same letters.

To teach the speech consonants the teacher needs many exercises. The following techniques may prove useful:

1. Ask the pupil to look at a picture, say the name of the picture, and select the speech consonant that represents the beginning or end sound of the name. The first picture illustrated teaches the beginning speech consonant and the second one teaches the ending speech consonant.



2. Ask the pupil to discriminate between the various sounds for the same blends:

ch = *ch, i, sh, k*

sh = *sh*

th = the voiced *th* and unvoiced *th*

wh = *hw* and *h*

gh = *g, f,* or silent

ph = *f, v, p,* or silent

The Soft Sounds of C and G

The pupil already has learned the hard sound of *c* and *g*. He also must become familiar with their soft sounds. *C* and *g* generally have a soft sound before *e, i,* or *y*; * *c* becomes an *s* as in *cede* and *g* becomes a *j* as in *age*. The most common exceptions to this rule are: *get, girl,* and *give*.

The soft sound at the end of a word usually is spelled *ce* (*dance*), *ge* (*age*), or *dge* (*badge*).** *Dge* occurs after short vowels; after a consonant the sound is spelled by *ge* (*change*). In words borrowed from the French (*rough, garage, mirage*) *g* is a *zh* sound. The letter *c* also may have a *zh* sound as in *vicious* or *ocean* or a *z* sound as in *sacrifice* and *suffice*. This occurs in words of more than one syllable.

Here are some common one-syllable words containing the soft *c* sound:

bounce	dunce	lace	place	space
brace	face	lance	pounce	splice
cede	farce	mice	prance	spruce
cell	fence	mince	price	stance
cent	fierce	nice	prince	thence
chance	fleece	niece	quince	thrice
choice	flounce	once	race	trace
cinch	force	ounce	ride	trance
cite	glance	pace	scarce	trice
cyst	grace	peace	since	twice
dance	hence	pence	slice	vice
deuce	ice	piece	sluice	whence
dice	juice	pierce	source	wince

* When *c* is soft before *a*, it is written as *ç*.

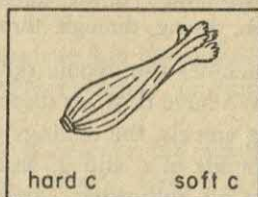
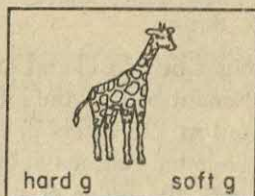
** In polysyllabic words it may be written as a *dg* (*badger*) at the end of a syllable.

Here are words illustrating the soft *g* sound:

age	dodge	germ	liege	sledge
badge	doge	gibe	lodge	sludge
barge	dredge	gist	merge	smudge
beige	edge	gorge	nudge	splurge
bilge	flange	gouge	page	sponge
blunge	fledge	grange	pledge	stage
bridge	forge	grudge	plunge	stooge
budge	fringe	gurge	purge	strange
bulge	fudge	hedge	rage	surge
cage	gage	hinge	range	tinge
change	gauge	hodge-podge	ridge	trudge
charge	gem	huge	rouge	urge
cringe	gene	judge	sage	verge
dirge	gent	large	siege	wage
			singe	wedge

Exercises for teaching the sounds of these letters may include the following:

1. Say the names of the pictures below. Does the name begin with a hard or a soft sound? Draw a circle around the correct answer.



2. The pupil may be shown a series of words illustrating both the hard and the soft sound. Thus:

cat
call
can
cut
cold
cure

cell
cent
circle
cycle
cyst
nice

He next is shown that in the above words *c* is hard before the vowels *a*, *o*, and *u* and soft before the vowels *e*, *i*, and *y*.

3. The pupil is asked to make a rule for the *c* and/or *g* sound by filling in the blank spaces in a statement like the following: *c* usually has the soft sound when followed by the vowels __, __, and __, and it has the hard sound when followed by the vowels __, __, and __.
4. The pupil must be taught the exceptions to the rule:
get, girl, give.

Three Letter Consonant Blends

The pupil first learns to deal with the two-letter blends and the speech consonants. Gradually, he is introduced to words that contain *scr*, *shr*, *spl*, *spr*, *squ*, *str*, and *thr*. Here are some common monosyllabic words beginning with these combinations:

Scr — screech, screen, scroll, script, scrunch

Shr — shrank, shred, shrewd, shriek, shrill, shrimp, shrine, shrink, shroud, shrove, shrub, shrug

Spl — splash, spleen, splice, splint, split, splotch, splurge

Spr — sprain, sprang, sprawl, spray, spread, spree, spring, sprint, sprite, sprout, spruce, sprung, spray

Squ — squall, square, squash, squat, squaw, squeak, squeal, squeeze, squelch, squid, squill, squint, squire, squirm, squirt, squish

Str — strafe, strain, strait, strand, strap, straw, stray, streak, stream, street, strength, stress, stretch, stride, strife, strike, string, stripe, strive, strode, stroll, strong, strove, stray, struck, strung

Thr — thrash, thread, threat, three, thresh, threw, thrice, thrift, thrill, throat, throb, through, throw, thrush, thrust

This concludes the phonic skills that might be considered to comprise Level II. We have thus far discussed consonant blends, the letters *k* and *q*, the long vowels, the endings *ing*, *ed*, and *es*, the letters *v*, *x*, *y*, and *z*, the soft sounds of *c* and *g*, and the three-letter consonant blends. Obviously not all authorities would agree with the order of presentation. However, this doesn't seem quite as important as that the various skills be taught and that the child's phonic diet consist of words that permit him to develop generalizations and to apply them to new words.

The Effect of R on a Preceding Vowel

Level III introduces the pupil to *ar*, *er*, *or*, *ir*, and *ur*, to the diphthongs, and to formal training in syllabication and accentuation.

The consonant sometimes influences the sound of the vowel. The letter *r*, when following a single vowel, changes the sound of the vowel. The vowel is neither long nor short. The pupil already has some experience with this phenomenon. The *a* in monosyllables when followed by *r* or when followed by *r* plus another consonant is the *a* sound as in *bar*, *car*, *art*, *arm*, *far*, and *mar*.

Unfortunately, not all *a*'s followed by *r* are pronounced as *ä*. When the *r* is followed by a silent *e* as in *care* or *fare* or when it is the final letter in an accented syllable and is followed by a vowel, as in *parent* or *Mary*, the *a* frequently is pronounced *e(ə)*. However, the *a* may be a short vowel

in this last instance: for example, paradise and paradox. When the *a* is the final letter in an unaccented syllable and is followed by an *r* in the next syllable it is *ə*: thus, maroon and cataract.

In the suffix *ar*, as in ward, and in some final syllables, *ar* is pronounced (*ə*)*r*: thus, liar, granular, westward, pillar, dollar, orchard, Tartar, circular, lizard, sugar, grammar, collar, wizard, lizard, and mustard. In the suffix *ary*, *ar* is pronounced as *er*: thus, stationary, legendary, and sanitary.

Er in monosyllabic words (*her*), generally in accented syllables (*revert*), and in unaccented syllables in which the *er* is followed by a consonant (adverb) is sounded as *ər*. When it names a person (*baker*) or has a comparative meaning (*hotter*), it is usually pronounced as (*ə*)*r*. It may also be *er* as in *meridian*, *i*(*ə*) as in *here*, or *e*(*ə*) as in *there*, *where*, *ferry*, *herring*, *very*, or *perish*.

Ir is sounded as *ər* in monosyllables (*firm*) and in accented syllables (*firkin*). It may be sounded as *ə*(*r*) (*tapir*), *īr* (*dire*), or *ir* (*virile*, *irrelevant*, *irritate*).

Or is sounded as *ər* when *or* follows *w* as in *word*.^{*} In other monosyllabic words it is sounded as *ō* or as *ò*. The *or* may be pronounced as *ə*(*r*) (*inventor*) or may become *är* or *ör* as in *coral* or *torrid*. It usually is pronounced *ə*(*r*) when it names a person (*doctor*) or a quality or condition (*horror*).

Ur is sounded as *ər* in monosyllabic words and in the accented syllable of polysyllabic words. *Ur* also may be *ə*(*r*) (*liturgy*), *ūr* (*cure*), and *û* (*sure*, *jury*, *hurrah*, *rural*).

When *ar*, *er*, *ir*, *or*, or *ur* are followed by a second *r*, the vowel is usually short: thus, barrel, barren, sparrow, arrest, barrack, derrick, error, terrier, errand, mirror, borrow, horror, sorry, corrupt, torrent, torrid.

The vowel also is short when the *r* is followed by a vowel: thus, charity, tariff, lariat, parachute, paratroop, parasol, parapet, parallel, parasite, parable, ceremony, America, very, inherit, peril, verify, merit, cleric, spirit, miracle, direct, quorum.

Sometimes the *r* is separated from the vowel preceding it and has no effect on its pronunciation: thus, arise, around, arena, spiral, Irish, erect, erupt, hero, irate, siren, uranium, pirate, virus, furious, spirant, wiry, glory, tyrant, mores, oral, story, Tory.

The following lists of words illustrate the various combinations of the vowel with the *r* in monosyllabic words:

er as *ər* — berg, berth, clerk, err, erst, fern, germ, her, herd, jerk, kern, merge, nerve, per, perch, perk, pert, serf, serge, serve, sherd, stern, swerve, term, tern, verge, verse, versed, wert.

ir as *ər* — birch, bird, birth, chirp, dirge, dirt, fir, firm, firn,† first, flirt, firth,

* The exception is *worn*.

† *Firn* has a short *i*.

gird, girl, girt, girth, irk, Kirk, mirk, mirth, quirk, shirk, shirt, skirt, squirm, squirt, stir, third, twirl, whirl.

or as *ô* — born, cord, cork, corn, for, gorge, horn, horse, Lord, morn, Morse, norm, Norse, north, or, orb, scorch, scorn, short, snort, sort, sport, stork, storm, torch, tort, worn.

or as *ər* — word, work, world, worm, worse, worst, wort, worth.

ur as *ər* — blur, blurb, blurt, burg, burn, burnt, burp, burr, burse, burst, church, churn, curb, curd, curl, curse, curt, curve, durst, fur, furl, gurge, hurl, hurt, lurch, lurk, nurse, purge, purse, scurf, slur, spur, spurge, spurn, spurt, surf, surge, turf, Turk, turn, urge, urn.

The Effect of *W* on a Preceding *A*

The *w* changes the sound of *a* much as the *r* changes the sound of *e*, *i*, or *u*. The *a* may become a short *o* or an *ô*. The following words are illustrative:

wa as *wă*

(short *o*) — swab, swamp, swan, swap, swat, wad, wand, want, was, wash, wasp, watch, watt, what, swallow, tightwad, waffle, wallet, wallup, wanting, washing, washrag, washcloth, washer, washroom, watchdog, watchful, watchman, wattage, whitewash

wa as *ô* — dwarf, swarm, war, ward, warm, warp, wart, walleye, walnut, warble, warden, wardrobe, warlike, warmly, warming, warrant

The Diphthongs

Diphthongs are vowel combinations that have a single sound. The sound is distinct from that represented by either of the single letters. The most common such combinations are: *ei*, *ey*, *ie*, *oi*, *oy*, *oo*, *ou*, *au*, *aw*, *ew*, *ow*, and *ui*.*

EI (EY)

A common pronunciation for *ei* or *ey* is that of a long *a*. Before *r* the pronunciation is *e(ə)*. The following words are illustrative: beige, deign, feign, feint, heir, heiress, reign, rein, reindeer, seine, skein, their, veil, vein; eight, freight, neigh, sleigh, weigh, weight, hey, obey, prey, they, whey.

In some words *ei* or *ey* is simply pronounced as a long *e*, the second vowel being silent. Thus: key, keyboard, keyhole, keynote, passkey, ceiling, deceive, conceive, receive, perceive, leisure, seize, either, neither.

The *ei* or *ey* may be pronounced as long *i*. Thus: eye, eyeball, eyebrow, eyelash, eyelid, eyeglass, eyestrain, pinkeye, height.

* Some classify *oi* (boil), *oy* (toy), and *ou* (cow) as diphthongs and the remainder as vowel digraphs.

The *ei* may be a short *e*, heifer. And it may be a short *i* as in forfeit, sovereign, money, monkey, donkey, turkey, valley, alley, honey, and hockey.

IE

Ie generally is a long *e* or a long *i*. The long *i* sound is common when *ie* is at the end of a word and in the ending *ied*. The following words are illustrative of the various sounds for *ie*:

Long e — bier, brief, chief, fief, field, fiend, fierce, frieze, grief, grieve, lief, liege, mien, niece, piece, pier, pierce, priest, shield, shriek, siege, thief, tier, wield, yield, achieve, backfield, belief, believe, cashier, frontier, grievance, grievous, hygiene, priestly, rabies, relief, retrieve, timepiece, wieldly.

Long i — die, fie, fied, fried, lie, pie, tried, vie, allied, applied, belie, implied, tie-up, untie, untried.

Short e — friend, befriend, friendless, friendly, friendship.

Short i — candied, doggie, kerchief, mischief, married, sieve.

OI, OY

The *oi* sound is common and is quite constant.* It occurs in the following words: boil, broil, choice, coil, coin, droit, foil, foist, hoist, join, joint, joist, moist, noise, oil, point, poise, soil, spoil, toil, voice, void, appoint, avoid, boiler, cloister, foible, jointly, jointweed, noisy, recoil, rejoice, rejoin, toilet, toiler, topsoil, uncoil, and unsoiled.

The *oy* occurs in boy, coy, joy, Roy, soy, toy, Troy, alloy, bellboy, boycott, boyhood, boyish, convoy, cowboy, decoy, deploy, destroy, enjoy, envoy, joyful, loyal, oyster, royal, and tomboy.

THE COMBINATION OO

Oo can be pronounced as *ü* (bloom), as *û* (cook), as *ō* (door), and as short *u* (blood). The latter two occur infrequently. In fact, these may be taught as exceptions. The combination, *ook*, occurs frequently enough in words that one may speak of the *ook* words. Some examples are: book, brook, cook, crook, hook, look, nook, rook, shook, and took.

Only spook is an exception.

The following words are illustrative of the *oo* combination:

oo as *ü* — bloom, boo, boom, boon, boost, boot, booth, booze, brood, broom, choose, coo, cool, coon, coop, coot, croon, doom, drool, droop,

* The *oi* in choir is a long *i*. Note also: buoy, buy, and buyer.

food, fool, gloom, goof, goon, goose, groom, groove, hoof, hoop, moo, mooch, mood, moon, moose, moot, noose, pooch, pool, proof, roof, room, roost, roct, school, scoop, scoot, shoo, shoot, sloop, smooch, smooth, snoop, snoot, snooze, soon, sooth, soothe, spook, spool, spoon, stooge, stoop, swoon, swoop, too, tool, toot, tooth, troop, whoop, zoo, zoom, baboon, balloon, ballroom, bamboo, bassoon, bedroom, behoove, blooming, booby, booster, bootleg, bridegroom, caboose, cartoon, classroom, cocoon, cooler, coolie, disproof, doodle, fooling, foodstuff, foolish, gloomy, homeroom, igloo, moonlight, moonshine, mushroom, noodle, noonday, noon-time, papoose, platoon, raccoon, reproof, roofing, roomette, roommate, rooster, rootbeer, saloon, storeroom, toothache, toothbrush, toothpick.

oo as *û* — barefoot, bookend, bookmark, bookworm, childhood, cookbook, footstool, football, footbridge, foothill, footnote, girlhood, goodness, lookout, manhood, redwood, rookie, sooty, woodpile, woodshed, woodsman, woodwork, lookout, book, boor, brook, cook, crook, foot, good, hood, hook, look, moor, nook, poor, shook, soot, stood, took, wood, wool.

oo as *ô* — brooch, door, floor, doorstep, doorway, doorsill.

oo as

short *u* — blood, flood, bloodshed, bloodshot, bloodstain, bloody, floodlight.

THE COMBINATION OU

Ou has numerous pronunciations: as *ou* in blouse; as long *o* in course; as *û* in coop; as *û* in could; as *o* in bought; as short *u* in touch; and as *o* in cough. Certainly, the most common sounds are *ou*, *ô*, and *û*. The child should learn the "ought" words and the "could" words. He must learn the pronunciation of such common words as tough, cough, tour, and your.

The following words may be used to teach the various sounds:

Ou as *ou* — blouse, bough, bounce, bound, bout, cloud, clout, couch, count, crouch, douse, drought, flounce, flour, foul, found, fount, gouge, gout, grouch, ground, hound, hour, house, loud, mound, mount, mouse, mouth, noun, ouch, ounce, our, oust, out, pouch, plough, pounce, pound, pout, proud, round, rout, scour, scout, shout, shroud, abound, about, account, aground, aloud, around, arouse, astound, background, blockhouse, blowout, bouncing, bounty, cloudburst, cloudy, compound, counsel, county, devour, devout, discount, doghouse, enounce, flounder, greenhouse, greyhound, guardhouse, housecoat, household, housemaid, housewife, housework, icehouse, mountain, mounted, mounting, mouthful, ourself, oyster, outboard, outbreak, outburst, outcome, outcry, outdoors, outer, outfit, outing, outlaw, outlay, outlet, outlive, outmost, outpost, output, outrage, outright, outsell, outshine, outside, outskirt, outsmart, outward, outwards, outweigh, outwork, playhouse, pronoun, pronounce, propound, recount, renounce, rounding, roundness, roundup, rousing, southwest, stoutness, trousers.

- Ou* as *ō* — course, court, dough, four, fourth, furlough, mould, mourn, pour, soul, source, though, although, doughnut, thorough, courtroom, courtship, courtyard, discourse, doughnut, fourteen, fourthly, mourning, poultry, recourse, resource.
- Ou* as *ü* — coup, couth, croup, ghoul, group, rouge, route, soup, through, wound, you, youth, cougar, coupon, detour.
- Ou* as cousin, country, couple, double, enough, tough, rough, roughage,
short *u* — roughen, roughly, roughness, touch, trouble, young, famous, touch-back, touchy, toughen, grievous, jealous, monstrous, pious.
- Ou* as *ô* — bought, brought, cough, nought, fought, ought, sought, thought, wrought.
- Ou* as *û* — could, should, tour, would, your
- Ou* as *ə* — adjourn, journal, journey, flourish

THE COMBINATION AU

Au regularly is pronounced as *ô* (aught). The principal exceptions are draught, gauge, aunt, and laugh. *Aw* also is pronounced as *ô* (law) when it occurs at the end of the word or syllable or is followed by *k*, *l*, or *n*.

- Au* as *ô* — aught, caught, caulk, cause, craunch, daub, daunt, fault, faun, flaunt, fraud, Gaul, gaunt, gauze, haul, haunch, haunt, jaunt, laud, launch, mauve, naught, naughty, Paul, paunch, pause, raught, sauce, Saul, staunch, taught, taunt, vault, vaunt, applaud, applause, assault, auburn, audit, auger, augment, augur, August, austere, auto, because, caucus, causal, dauntless, default, defraud, laundress, naughty, saucepan, saucer, saucy, slaughter.
- Aw* as *ô* — awe, awl, awn, bawl, brawl, brawn, claw, crawl, dawn, draw, drawl, drawn, fawn, flaw, gawk, hawk, jaw, law, lawn, paw, pawn, raw, saw, scrawl, shawl, slaw, spawn, sprawl, squaw, squawk, straw, thaw, trawl, awesome, brawney, awful, awning, bylaw, drawer, drawing, gnawing, hacksaw, inlaw, jigsaw, lawful, lawless, lawsuit, lawyer, pawnshop, rawhide, tawny.

THE COMBINATION OW

The pupil already has learned the long *o* sound of *ow*. He also must learn the *ou* sound of *ow*. This sound at the end of the word usually is written as *ow* and occurs in the following words:

bow, brow, brown, browse, chow, clown, cow, cowl, crowd, crown, down, dowse, drown, drowse, frown, gown, growl, how, howl, jowl, owl, plow, prow, prowl, scowl, sow, town, wow, allow, avow, backdown, breakdown, chowchow, cowbell, cowbird, cowboy, cowhide, dowry, endow, flower, Howard, howdy, nightgown, powder, power, powwow, prowess, renowned, towel, tower, townsend, township, uptown.

THE COMBINATIONS EW, UE, UI

The pupil has learned two sounds for the long *u*: the *yü* sound and the *ü* sound after *j*, *r*, *bl*, *fl*, *pl*, *cl*, *gl*, and *sl*. The *yü* sound is regularly used after *b*, *c*, *f*, *g*, *h*, *k*, *m*, *p*, and *v*. He must apply the same principles to the *ew*, *ue*, *w*, and *ew* combinations:

ew as *yü* — ewe, few, hew, lewd, mew, new, pew, phew, sew (*sō*), skew, spew, stew, thew, view, whew, sinew, askew, nephew, newly, newness, renew, review.

ew as *ü* — blew, brew, crew, drew, flew, grew, Jew, screw, shrewd, slew, threw, Hebrew, jewel, jewess.

ue as *yü* — cue, due, hue, sue, imbue, statue, tissue.

ue as *ü* — blue, clue, flue, glue, rue, slue, true, accrue, bluegill, bluegrass, blueprint, construe, gruesome, rueful, untrue.

ui as *yü** — suit, nuisance.

ui as *ü* — bruise, cruise, juice, sluice, grapefruit, fruitcake, juicy, recruit.

eu as *yü* — deuce, feud, Europe, feudal, Teuton, neural, neuter, neutral, neutron.

Syllabication

Up to this point we have not emphasized the principles that govern accentuation and syllabication. Much learning, however, can be simplified if the pupil can apply these rules and principles effectively.

The good reader knows how to divide words accurately and rapidly. This does not mean that he divides every word that he comes to in his reading or that he knows the rule for dividing it. The former would slow down his reading and might even interfere with good comprehension. The latter is not necessary for good reading.

The pupil has met and used numerous two-syllable words in his previous reading. He has learned that the number of syllables in a word is determined by the number of vowel sounds that is heard in the word. For example, the words butter, hammer, cannot, into, under, pell-mell, kitten, after, mistake, puppet, signal, insect, and sandal are two-syllable words.

Thus, the first principle to be learned is that every syllable contains a sounded vowel. At times, a vowel itself constitutes a syllable: a-corn, I, vi-o-let, lin-e-ar, lin-e-al, cer-e-al, o-pen, i-de-a.

The pupil also must learn that a syllable may contain more than one vowel. In this instance, the two vowels are usually pronounced as one, the first one being long and the second one, silent (boat).

* Exceptions: suite (*e*); build, built, guilt, guilty, building; sure (*shür*).

There are two kinds of syllables: closed syllables and open syllables. A closed syllable is one that ends with a consonant: thus, *cat*, *basis*, and *magnetic*. The vowel in a closed syllable is usually a short vowel. There are some common exceptions. These were discussed previously in this chapter under the heading, "Principle of Position."

An open syllable is one that ends in a vowel: thus, *cry*, *by*. The vowel in an open syllable is usually a long vowel. The most common exception to this rule may be the short *y* sound in the ending *ly* as in *nobly*.

The short *y* sound is very common in two-syllable words. It occurs in words like *abyss*, *lyric*, *hymnal*, *symbol*, *symptom*, *synod*, and *system*. It occurs most frequently in the ending *ly*. Below is a list of words with the short *y* ending. Note also that words ending in *ey* and *ie* frequently have a short *i* sound.

ably	cocky	grimy	kingly	pigmy	sloppy
army	collie	grisly	kinky	pity	smelly
baby	copy	grumpy	kitty	plenty	snappy
badly	crabby	gusty	lackey	poppy	soggy
baldy	cranky	handy	lady	pussy	sorry
barley	dimly	happy	lanky	putty	spotty
belfry	drafty	hardy	lassie	rally	study
belly	empty	hasty	lately	Randy	stiffy
berry	entry	hefty	lily	ruddy	sultry
body	flaky	Henry	madly	rummy	sunny
brandy	foggy	hobby	manly	rusty	taffy
buddy	folly	holly	marry	sadly	tally
buggy	fifty	homely	muddy	Sally	tinny
bumpy	filly	humily	nasty	scabby	tippy
bunny	funny	hungry	nifty	scanty	tipsy
busy	froggy	jelly	nippy	Scotty	Tommy
cabby	gladly	jiffy	pantry	sentry	twenty
candy	glory	jolly	pappy	silly	ugly
carry	grassy	jumpy	parley	simply	wiggly
clammy	gravy	Kenny	party	singly	windy
classy	greasy	kidney	penny	sissy	
clumsy	greedy	kindly			

Although the *y* is a short sound, many persons pronounce it as a long *e* sound.

RULE I

When two consonants follow a vowel, as in *after*, *kitten*, *pencil*, *summer*, and *butter*, the word is divided between the two consonants, and the first syllable ends with the first consonant. In instances of this kind the second consonant is silent when the consonants are the same. Since the first vowel is followed by a consonant, it is a short vowel.

An exercise like the following is useful in teaching the rule.

	First Syllable con	Second Syllable duct
1. Conduct	_____	_____
2. Mustang	_____	_____
3. Offend	_____	_____
4. Bandit	_____	_____
5. Picnic	_____	_____

The pupil must be shown that not all double consonants can be divided. Consonant blends and speech consonants fall into this category.

RULE II

When only one consonant or a digraph follows a vowel, as in paper, bacon, prefer, begun, and reshape, the word usually is divided after the first vowel and the consonant or consonant digraph begins the second syllable. The first vowel, in that it ends a syllable, is usually a long vowel.

EXCEPTIONS AND OBSERVATIONS

One: Not all words follow the rule. For example, planet, solid, robin, travel, study, record,* river, primer, present,* cabin, tropic, power, timid, habit, pity, body, quiver, copy, lily, and profit join the consonant to the first vowel. This makes the first vowel short and the accent is on the first syllable.

Two: The suffix *ed* is a syllable only when it follows the sound *d* or *t*. Previously in this chapter we listed numerous words ending in *d* or *t* such as aid, bat, blast, and blend.

Three: Whenever three or more consonants appear between two letters, the pupil must learn to look for consonant blends or speech consonants. These are never divided: thus, gam-bler, mi-grate.

Four: Whenever *le* ends a word and is preceded by a consonant, the last syllable consists of the consonant and the *le*. We divide thus: ta-ble, mid-dle, peo-ple. The *e* in *ble*, *the*, *ple*, and *dle* is silent. Some authors, however, suggest that *le* says *el* with *e* being shorter than usual and called schwa.

Observe that in *tle* the *t* sometimes is silent and at times may be pronounced. Thus in battle, bottle, brittle, mantle, cattle, little, rattle, and tattle the *t* is pronounced; in castle, hustle, jostle and rustle (words in which *tle* follows the letter *s*), it is silent.

* These may be divided according to both rules, dependent upon their meaning in the sentence.

able	cradle	kettle	raffle	scuttle
ankle	dazzle	kindle	ramble	stable
apple	dimple	little	rattle	steeple
babble	double	mantle	riddle	struggle
battle	fable	maple	rifle	table
beetle	fondle	marble	ripple	tackle
Bible	fumble	mangle *	rubble	tangle *
bicycle	gable	meddle	ruffle	tattle
bobble	gamble	middle	rustle	temple
bottle	gargle	mingle *	saddle	tickler
brittle	gentle	muddle	sample	tingle *
bubble	giggle	muffle	scuffle	title
buckle	grumble	mumble	simple	trample
bugle	haggle	muscle	single *	trifle
bundle	handle	nimble	sizzle	triple
bungle *	humble	nibble	smuggle	treble
cable	hustle	nipple	sniffle	tremble
cackle	jiggle	paddle	snuggle	tumble
candle	jingle *	pebble	spangle *	turtle
castle	little	pickle	sparkle	twinkle
cattle	jostle	pimple	swindle	uncle
circle	juggle	puddle	stubble	waggle
coddle	jumble	purple	supple	wiggle
crackle	jungle *	puzzle	scuffle	wriggle
		rabble		

Five: Sometimes it is necessary to divide between two vowels: cre-ate. Common words in which this occurs are the following:

ai—archaic, laity, mosaic
ea—cereal, create, delineate, fealty, ideal, laureate, lineate, linear, permeate
ei—being, deity, reinforce, reinstate, spontaneity
eu—museum, nucleus
ie—client, diet, dietary, expedient, orient, piety, propriety, quiet, science
oa—coadjutor, coagulate, oasis
oe—coefficient, coerce, coexist, poem
oi—egoist, going
oo—cooperate, coordinate, zoology
ue—cruel, duel, duet, fluent, fuel, gruel, influence, minuet
ui—altruism, ambiguity, annuity, fluid, fruition

Six: In a compound word the division comes between the two words making up the compound: post-man.

Seven: Prefixes and suffixes are usually set apart from the rest of the word: in-sist, hot-est.

Accentuation

A word of two or more syllables generally is pronounced with more stress on one syllable. This is termed accent. In dictionaries the accent

* When *gle* is preceded by *n*, it is pronounced as *gg'l*.

mark (') is placed just after the syllable that receives major stress. In words of three or more syllables there may be a secondary accent such as in *lo'co mo'tive*.

Generally, words of two syllables in which two consonants follow the first vowel accent the first syllable: thus, *after*, *kitten*, *puppet*, and *butter*.

When a two-syllable word contains two vowels in the second syllable but only one is pronounced, the second syllable generally is accented: *abide*, *abode*, *above*, *about*, *aboard*, *delay*, and *proceed*. Usually, the last syllable is long.

In three-syllable words in which the suffix is preceded by a single consonant, as in *adviser*, *exciting*, *translated*, and *refusal* or in *piloted*, *traveled*, and *shivered*, the accent may be on the first or second syllable. It is on the first syllable except when the root word (*advise*, *excite*, *translate*, and *refuse*) ends in *e* and the last syllable is accented.

In general, the accent is placed on alternate syllables (*dis'-ap-point'-ment*). Frequently, the accented syllable is followed by two unaccented syllables (*san'-i-ty*). At times the accent is on alternate syllables and the last two syllables are unaccented (*op'-por-tun'-i-ty*).⁹

Root words when preceded by prefixes or followed by suffixes usually are accented (*amuse*, *amusement*).

Words ending in *ion*, *ity*, *ic*, *ical*, *ian*, *ial*, or *ious* have the accent immediately before these suffixes (*consternation*, *athletic*, *immersion*, *industrial*, *harmonious*, *humidity*, *psychological*, *historian*).

Words of three or more syllables ending in a silent *e* usually accent the third last syllable (*graduate*, *accommodate*, *anticipate*).

In introducing the pupil to accent and syllabication, the teacher needs to use words that the pupil knows. Repeated exercise with actual words will help the pupil to obtain a functional knowledge of the generalizations stated above.

Initially the teacher may pronounce a word orally and may let the pupils indicate by one or two fingers whether the word has one or two syllables or whether the accent falls on the first or second syllable. Gradually, the pupil should learn to write a word, divide it, indicate its accent, and at the upper grade levels may give the rules which govern its syllabication and accentuation.

This concludes the phonic skills that might be considered to comprise Level III. We have grouped here the use of *r* after a vowel, the diphthongs, and syllabication and accentuation. These skills in general are more difficult to acquire than are those that were discussed as part of Level II.

Let us now take a look at Level IV. This introduces phonic and read-

⁹ Rudd, Josephine. *Word Attack Manual*. (Cambridge, Massachusetts: Educators Publishing Service, 1961), p. 119.

ing problems occasioned by silent letters and by certain two- and three-syllable words.

Silent Letters

Sometime in his reading education the pupil should learn that certain consonants are not pronounced. The following examples are illustrative:

Silent b after m: bomb, bomber, ~~bom~~bproof, bombshell, climb, crumb, dumb, lamb, limb, numb, plumber, plumbing, succumb, thumb, tomb, womb.

Silent b before all consonants except l & r: bdellium, debt, debtor, doubt, doubtful, subtle.

Silent c: czar, indict, victuals.

Silent ch: drachm, fuchsia, schism, yacht.

Silent c after s: Ascend, ascent, descend, descent, scene, scenic, scent, scepter, muscle, science, scissor, transcend.

Silent d: Adjunct, adjust, handkerchief, handsome, Wednesday.

Silent d before g: badger, dodger, edge, fudge, etc.

Silent g before n: align, arraign, benign, campaign, design, ensign, feign, foreign, gnarl, gnash, gnat, gnaw, gnome, malign, reign, resign, sign, signer, signpost.

Silent gh: eight, freight, neigh, neighbor, sleigh, straight, straighten, weigh, weight.

Silent h: aghast, ah, diarrhea, Durham, exhaust, exhibit, forehead, ghost, heir, hemorrhage, honest, honestly, honor, hour, hourly, myrrh, oh, rhesus, rhetoric, rhinestone, rhinoceros, rhubarb, rhumb, rhyme, rhythm, rhythmic, shepherd, Thomas, Thomism, Thompson, vehement, vehicle.

Silent k before n: knack, knap, knapsack, knave, knead, knee, kneel, knelt, knew, knife, knight, knit, knob, knock, knoll, knot, know, knowledge, knuckle.

Silent l almond, alms, balk, balmy, behalf, calf, calk, calm, chalk, embalm, folk, folklore, half, jaywalk, kinsfolk, kiln, palm, polka, psalm, salmon, solder, talk, walk, would, yolk.

Silent n after m: autumn, column, condemn, damn, damned, hymn, hymnal, solemn, solemnly.

Silent p: corps, cupboard, pneumatic, pneumonia, psalm, psalmist, psalter, pseudo, psyche, psychiatry, psyche, psychic, raspberry, receipt.

Silent s: aisle, fuchsia, Arkansas, bas-relief, Carlisle, chamois, corps, debris, Illinois, island, isle, Louisville, rendezvous, St. Louis, viscount.

Silent t: bustle, castle, chasten, Chestnut, Christmas, fasten, hasten, hautboy, hustle, listen, Matthew, mortgage, mustn't, often, soften, thistle, whistle.

Silent th: asthma.

Silent w: awry, answer, boatswain, bowler, enwrap, own, owner, rewrite, sword, swordfish, swordsman, toward, two, Warwick, who, whole, wholeness, wholesale, wholesome, wholly, whom, whose, Woolwich, wrack, wraith, wrangle, wrangler, wrapper, wrath, wreak, wreath, wreck, wreckage, wren, wrench, wrest, wrestle, wrestling, wretch, wring, wrinkle, wrist, wristband, writ, write, writer, writing, writhe, wrong, wrongly, wrote, wroth, wrought, wrung, wry, and in the ending *ow* as in snow.

Two-Syllable Words and Compounds

Chapter 10 contains a small section on two-syllable words and compounds. We introduced the prefixes: *ab*, *ad*, *be*, *com*, *de*, *dis*, *en*, *ex*, *in* (into), *in* (not), *mis*, *pre*, *pro*, *re*, *sub*, *un*. We also introduced the pupil to the suffixes: *ing*, *ful*, *ness*, *less*, *dom*, and *let*. In this chapter we have added *ed* and *es*. For a more complete listing of prefixes and suffixes and how to teach them see Chapter 12.

In Appendix II at the end of this book we have listed a series of two-syllable words to accompany each phase of learning in this chapter. Thus, we have listed words useful in teaching the beginning consonant blends, the end consonant blends, the *k* and *q* sounds, the long vowels, the structural endings, the letters *v*, *x*, *y*, and *z*, the speech consonants, the soft *c* and *g* sounds, the three-letter consonant blends, etc.

Two- and three-syllable words present numerous phonic situations not met in monosyllabic words. But first let us say a few words about compound words.

COMPOUND WORDS

Compound words usually are formed from two roots. Sometimes the compound word keeps the meaning of the original two words, thus classroom, eyelash, or hilltop. Frequently, the meaning of the compound is completely new, thus broadcast, township, or wholesale.

Not all compounds are written as one word, thus: ice cream, living room, dining room, sea power, post office, oil painting, air brake, parcel post, money order, or school spirit.

Whenever a compound word is used as a modifier and occurs before the word that it modifies, it is hyphenated. We speak of a near-by home, an out-of-town visitor, a well-known player, or a full-grown man.

The hyphen also is used with self (self-denial, self-confidence, self-

control) and with compound numbers from 21 to 99 (twenty-six men).

Here is a list of common compounds:

airplane	eyebrow	nighttime	sundown
backbone	eyelash	northwest	sunset
bagpipe	farmland	outgrow	sunshade
barnyard	fireman	outline	sunshine
baseball	fishhook	outskirts	sunstroke
bedside	foreman	pancake	sunup
bedtime	footprint	plaything	tadpole
beehive	footstep	playtime	toothbrush
beeline	footstool	quicksand	touchdown
blacktop	grandstand	railroad	township
bobcat	grapevine	rainbow	trailways
bobsled	graveyard	ransack	treetop
bobwhite	gumdrop	roommate	upkeep
boldface	halfway	rosebush	uplift
bloodshed	hedgerow	sandhill	upset
boxcar	himself	sawdust	vineyard
broadcast	hillside	seacoast	warehouse
broomstick	hilltop	schoolroom	watchman
breakdown	horseback	seesaw	waylay
byways	inland	shipshape	weekend
campfire	inside	sideline	wholesale
cardboard	instep	sidetrack	wigwag
childhood	itself	signpost	wishbone
classmate	kidnap	smokestack	withdraw
classroom	limestone	snowshoes	within
corkscrew	lookout	soapsuds	without
cornstalk	makeshift	stagecoach	withstand
cowboy	mankind	starfish	windshield
daylight	maybe	statehood	woodpile
dragnet	milkman	steamboat	woodland
drumstick	milkshake	subway	workbook
earthquake	milkweed	sunburn	yardstick
elsewhere	newsboy	sunburst	yearbook
		Sunday	yuletide

Methods of teaching compound words were discussed previously and are applicable at the upper-grade levels.

SPECIAL PROBLEMS WITH TWO- AND THREE-SYLLABLE WORDS

Multisyllabic words introduce numerous problems not usually met in one-syllable words. For example, in one-syllable words one expects a long middle vowel when the word ends in a silent *e*: thus *dame*, *dine*, *plume*. This rule does not apply in some multisyllabic words. For example:

ace = is: solace, furnace, Horace, menace, palace, preface, surface
age = ij: adage, baggage, bandage, bondage, breakage, cabbage, carnage,

carriage, cleavage, coinage, cottage, courage, damage, dosage, drainage, forage, garbage, homage, hostage, image, language, leakage, luggage, manage, marriage, message, mileage, mortgage, orphanage, package, passage, pillage, postage, pottage, roughage, rummage, salvage, sausage, savage, scrimmage, sewage, seepage, soilage, soakage, spoilage, village, vintage, voltage, voyage, wastage, wattage, wreckage, yardage

<i>ege</i> = <i>ēg</i> :	reneege
<i>ege</i> = <i>ef</i> :	college
<i>ege</i> = <i>ij</i> :	privilege
<i>ige</i> = <i>ēzh</i> :	prestige
<i>ase</i> = <i>is</i> :	purchase
<i>ate</i> = <i>it</i> :	chocolate, climate, deliberate, delicate, delegate, desolate, duplicate, frigate, palate, prelate, private, senate, separate, temperate
<i>ice</i> = <i>is</i> :	chalice, complice, crevice, justice, malice, notice, novice, office, practice, service
<i>ice</i> = <i>ēs</i> :	caprice, police
<i>ile</i> = <i>il</i> :	agile, docile, fertile, fragile, futile, hostile, missile, mobile, reptile, servile, sterile, tractile, virile*
<i>ile</i> = <i>ēl</i> :	automobile, castile
<i>ine</i> = <i>in</i> :	doctrine, engine, ermine, famine, genuine, urine, but also long <i>i</i> as in divine, turpentine
<i>ine</i> = <i>ēn</i> :	carbine, machine, marine, morphine, ravine, routine, sardine, vaccine, vaseline
<i>ise</i> = <i>is</i> :	premise, promise, treatise
<i>ise</i> = <i>ēs</i> :	valise
<i>ite</i> = <i>it</i> :	respite
<i>ive</i> = <i>iv</i> :	active, captive, festive, massive, motive, passive, tractive
<i>ive</i> = <i>ēv</i> :	naive
<i>uce</i> = <i>is</i> :	lettuce

The following are examples of other problems in reading multisyllabic words:

<i>ain</i> = <i>in</i> :	bargain, Britain, captain, certain, chaplain, chieftain, curtain, fountain, mountain, villain
<i>ay</i> = <i>i</i> :	always, Monday, yesterday
<i>ia</i> = <i>i</i> :	marriage, parliament
<i>ience</i> = <i>shens</i> :	patience

* chief exception is *gentile*; also note *exile*, *crocodile*, *reconcile*; *juvenile*, *infantile*, *mercantile*, and *versatile* have both pronunciations.

- ce, ci, si, ti, as sh:* ocean; electrician, musician, physician, politician; cordial, social, racial, special, facial, glacial, official, special; ancient, sufficient, efficient; precious, spacious, delicious, conscious, ferocious, cautious, gracious, spacious, vicious; mission, cession, decision, fusion, lesion, occasion, passion, pension, tension, torsion, version; action, attention, auction, caption, caution, definition, diction, edition, faction, fraction, friction, function, junction, ignition, lotion, mention, motion, nation, notion, option, portion, potion, sanction, section, station, traction, unction; partial, martial, nuptial, confidential, residential, potential; tertian; patient, patience, quotient, transient; ambitious; militia
- s = sh:* mansion, nauseous, issue, tissue
- s = zh:* vision, visual, usury, fusion
- sure = shər; zhər:* censure, measure, pleasure, pressure, treasure, tonsure
- i = y:* familiar, peculiar, genius, behavior, junior, senior, guardian, Indian, brilliant, Italian, valiant, billion, champion, companion, million, onion, opinion, union, Spaniard, spaniel, congenial, convenience, convenient, obedient, Muriel, Daniel, William, Julia, California, Virginia, Pennsylvania, Celia, India, Columbia, Philadelphia, period, radio, curious, furious, glorious, serious
- i = long e:* broccoli, ski, spaghetti, police, machine, antique, physique, technique, unique, clique, pique, intrigue, fatigue, simile, facsimile, recipe
- du + r = jür:* procedure, verdure*
- tu + r = chür:* capture, creature, culture, departure, feature, fracture, furniture, future, fixture, gesture, lecture, mixture, nature, pasture, picture, puncture, stature, suture, tincture, texture, torture, venture, vulture
- tu + any other letter = chü:* actual, mutual, virtue, virtuous
- zure = zhər:* seizure, azure

Summary

In this chapter we examined Levels II, III, and IV of phonic proficiency. It is impossible to suggest at what time children should have mastered these skills or indeed whether they ever need to master all of them. Teaching must be adjusted to individual needs.

Throughout the preceding two chapters we have emphasized what ought to be taught. Perhaps we have not emphasized enough how we ought to teach, but certain basic approaches were outlined. There seem to be many benefits in teaching whole-word phonics. We find it profitable

* Common exceptions are *endure* and *mature*.

to introduce the child to the phonetic element through the whole word. This does not mean that another approach will not work. It does mean that since reading is a meaningful process the child should keep meaning foremost in his mind. This is best done through a whole-word approach.

From the beginning the child is taught to perceive the sounds in words. He also is taught to notice that some words have the same elements and that they sound alike. Finally, he either infers himself or is taught that he can get to the pronunciation and indirectly to the meaning of a word by noticing the elements in new words and sounding them as he sounded them in other words that he has learned. The child must make two generalizations:

- (1) that numerous words have some similarity in sound;
- (2) that he can use this knowledge in attacking other words.

Questions for Discussion

1. Discuss two parallel programs for teaching consonant blends and speech consonants.
2. Discuss the principles of variability, position, and silentness and give means for teaching them at the first-, second-, and third-grade level. When would you, if ever, switch from a functional to formal teaching of the principles?
3. Illustrate the difference between the voiceless *th* and the voiced *th* by describing the mouth geography of each.
4. Develop a sequential program for teaching the *ar*, *er*, *ir*, *or*, and *ur* combinations in monosyllabic words.
5. Is there a recommended way for teaching the pupil to substitute a consonant blend for a single consonant at the beginning of a word? Discuss the various techniques.

Appendix I

In this appendix we have attempted to provide materials to accompany Chapter 11. The first list of eight stories illustrate the beginning consonant blends.

Section B provides materials for teaching the end consonant blends. Section C provides materials for teaching the *k* and *qu* sounds.

Section A

Stories Emphasizing the Beginning—Consonant Blends

1

Bob and Pat

Bob has a drum.
Pat has a flag.
Bob plays the drum.
Rat-a-tat-tat-tat.
Bob and Pat trod up the hill.
Bob and Pat have fun.

2

Sam and the Smog

Sam is a frog.
He sits and smells the smog.
He does not see the stars.
He does not see the sun.
The smog clogs his smell.
Sam is a glum frog.

3

Sam Cuts the Grass

Sam is cutting the grass.
His dog, Fluff, is with Sam.
Fluff runs pell-mell in the grass.
Fluff sniffs the grass.
Sam does not want Fluff in the grass.
He throws a clod at Fluff.
Fluff runs to his hut.

5

Peg and Her Doll

Peg's doll is in the crib.
Peg wants her to have a nap.
Peg's dog sees the doll in the crib.
She wants the doll.

The dog grabs the doll from the crib.
Peg spots her dog.
Peg grabs the doll and slaps her dog.
Her dog is now a sad dog.

6

The Picnic

Jan's class is on a picnic.
Jan has a red dress for the picnic.
The picnic is on top of a hill.
It is a swell spot for a picnic.
The hill is flat on top.
The grass on the hill is not tall.
The picnic is lots of fun.

8

The Frogs

Sam has ten frogs in a net.
Sam and Brad put the frogs in the tub.
Sam puts the plug in and fills the tub.
The frogs swim and swim.

The frogs swim up to the rim and hop on the rug.

Brad calls: "Sam, grab the frogs."
Sam falls and spills the "Spic and Span."

Brad and Sam grab the frogs and throw the frogs in the net.

4

The Fat Cat

Jan has a fat cat.
The cat's name is Fluff.
Fluff sits on a twig in the grass.
A frog hops in the grass.
The cat runs at the frog.
The frog hops in the dam.

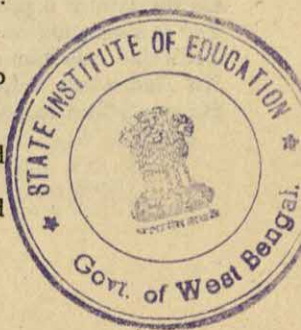
Jan has a rat.
The rat naps on Jan's lap.
Jan and the rat are pals.
The cat sees the rat on Jan's lap.
Fluff runs after the rat.
The rat runs from Jan's lap.
The fat cat cannot get the rat.
Fluff is a sad cat.

7

The Small Frog

Bob and Brad want a frog for a pet.
Bob has a trap. It is a net.
A small frog is sitting on a log.
Bob and Brad run to the log.

Bob drops the net in the grass.
The frog swims away.
The small frog is glad.
Bob and Brad are sad.



Section B

Sentences and Stories Emphasizing
The End—Consonant Blends

1. Jim and Tim slept in the tent.
2. Bob must help his dad put up the tent.
3. Tim sings as he pulls his sled up the hill.
4. A gust of wind swept past the tent.
5. Tom got his arm in the door. His dad put it in a sling.
6. The ant bit Tom's hand.
7. It was fun to run on stilts.
8. The tramp dwells (lives) in a tent.
9. Bob flung his mitt past the pump.
10. Dan hunted for clams in the sand.
11. Jan put the flag on the top of the mast.
12. Nan and Tom were playing in the barn.
13. Bill plays a big drum in the band.
14. The west wind will bring rain.
15. The cat hid the golf ball in the grass.
16. The jug is full of sand.
17. The west wind is twisting the plants.
18. The stems are bending in the wind.
19. He just held his hands and said: "I trust the wind will stop."
20. Can a dog run fast?
21. Jim went in the barn to get his mitt.

1

The Ant

An ant is in the barn.
He wants to eat.
He hunts and hunts.
He smells a crust.
He sees a crisp crust.
He eats the crust.

3

Ted Helps Dad

On the farm is a pond.
Ted is swimming in the pond.
Ted's dad calls him.
His Dad wants to plant the crops.
He wants Ted to help him plant the crops.

2

The Ball in the Pond

Tom and Tim want to play.
Tom has a ball and mitt.
Tim has a bat.
Tom hits the ball.
Tim runs to get the ball.
The ball goes into the pond.
Tim cannot get the ball.

Tim calls Tip to help him get the ball.
Tip swims to the ball.
Tip grabs the ball.
Tip is swift in swimming to the bank.
Tip is dripping wet.

Tom and Tim run to Tip.
Tom and Tim are glad to get the ball.
Tim pats Tip. Tom pats Tip.
Tip rests in the grass.

4

A Trip Down the Hill

Ben has a red sled.
Ben and Don go to a hill.
The hill is west of the barn.
Ben helps Don on the sled.
Now Ben gets on the sled.

Don and Ben start the sled.
The sled goes down the hill.
It goes past a big stump.
It hits a big drift.
Don and Ben land in the big drift.

5

Art and His Raft

Art is in a flat raft on the pond.
He has a flag on the raft.
The flag flaps in the wind.
But rain starts to fall.

Art stops his raft.
He runs in the barn.
Drops of rain fall on the barn.
Art is glad. The rain cannot fall on him.

6

Play Acting

Art acted the part of a farm lad in the play.
At the start he is pulling a cart.
He is selling plants and plums.

In the play are Ted and Bill.
Ted and Bill are part of a gang.
Ted and Bill bump into Art's cart.
Ted and Bill upset the cart.

Art swings his fist at the lads.
He does not hit Ted and Bill.
He gets his plants and plums.
But now the cart does not go.

At the end of the play Ted and Bill help Art.
Ted and Bill mend the cart.
Ted, Bill, and Art are glad.
Ted tells Bill: "I am glad we were just acting."

Section C

*Sentences and Stories Emphasizing
the K and Qu Sounds*

1. Jim kept the deck of cards.
2. Jan crept into the dark hall.
3. The cat drank all the milk.
4. Does the pen have ink in it?
5. Jim locks the door.
6. The hen pecks in the mud.
7. I have a pink hat.
8. Jim has a sack full of plums.
9. Are Nick and Dick sick?
10. Mom got some skim milk.
11. Jan skips and hops on the grass.
12. Nick's socks are pink.
13. The pig got stuck in the black mud.
14. Dick must give a talk in class.
15. I can do some tricks.
16. Jim wants to play in the park.
17. Jan fell off a log in the park.
18. On the bank sat a small frog.
19. Ask him to play ball with us!
20. We must pick plums for dad.

1

Dick's Pet

Dick has a pet.
 It cannot bark.
 It cannot cluck.
 The pet goes quack, quack.
 Dick's pet is a

3

Sam, the King of Swat

Sam is the "King of Swat."
 He can run, throw, and bat.
 But now he is on the spot.
 Sam is at bat.

Sam must get a hit.
 He cannot get a walk.
 He must strut his stuff.
 He cannot bluff.
 His pals must win.
 They must have a run.

The ball comes at Sam.
 Sam swings his bat.
 Sam hits the ball.
 The ball lands on top of the wall.
 Sam's pals win.
 Sam still is "King of Swat."

6

The Elk

An elk walks in the park.
 The elk is tall and quick.
 He stops to drink.
 He has his fill in the tank.

7

Nick, the Skunk

Nick is a black skunk.
 He lives in a clod hut.
 At dusk Nick goes for a walk.
 A dog barks at him.
 A man throws rocks at him.
 A lad throws a stick at him.
 Nick is sad. He does not have pals.
 Nick goes back to his hut and goes to bed.

2

Frank's Pet

Frank has a pet.
 It cannot bark.
 It cannot quack.
 The pet goes cluck, cluck.
 Frank's pet is a

4

On the Farm

Tim and Pam go to the farm.
 Tim and Pam see some pets.

They see a duck.
 It goes quack, quack, quack.

They see a hen.
 It goes cluck, cluck, cluck.

5

Dick and His Duck

Dick has a pet duck.
 The duck's name is Fluff.
 The duck goes quack, quack.
 The duck wants some milk.
 But Dick does not give her milk.

Dick throws Fluff in the stock tank.
 The duck quacks in the tank.
 The duck swims and swims.
 Fluff eats a fish.
 Fluff has lots of fun.

8

Eating in the Park

Dick and Frank walk to the park.
 Dick and Frank plan to eat in the park.
 Dick has a quart of milk.
 Frank has some hotdogs.
 Dick and Frank eat some hotdogs and drink milk.

Part Five



ADVANCING THE PUPIL'S READING SKILLS

Part Five consists of three chapters: Chapter 12, which deals with "Developing a Meaningful Vocabulary," Chapter 13, which is devoted to "Advancing the Pupil's Comprehension Skills," and Chapter 14, entitled, "Materials for Teaching." A reading program must provide for the development of meaning for both the individual word and the larger units of meaning. This is the purpose of Chapters 12 and 13. Finally, to advance the pupil's reading skills, the teacher must be able to refer the pupil to appropriate materials of reading. Chapter 14 will familiarize the teacher with such materials.

12

DEVELOPING A MEANINGFUL VOCABULARY

A reading program must make some provision for the development of meaning by the pupil. A prime requisite for reading is the association of meaning with a given symbol. Unless the pupil can associate meaning with a symbol, he has not learned to read. Understanding must escape him and reading without understanding is verbalism.

The pupil also must interpret meaning in its broader contextual sense. The word has meaning as part of a sentence, the sentence as part of a paragraph, and the paragraph as a part of the story. This phase we will discuss in Chapter 13. In this chapter we will concern ourselves with the association of meaning with the individual symbol. Association of meaning with a symbol cannot occur unless the person has had some experience, whether real or vicarious, with that something for which the symbol stands. The word, apple, for example, has no meaning to the child who has never had either a first-hand or vicarious experience with an apple. The child must first have an experience with an apple if he is to be able to *read* the word apple.

Most children have little difficulty with the concepts and the vocabulary needed for beginning reading. The average child experiences his first real difficulties with meaning in the third grade. Content-area reading introduces rapidly a new vocabulary that the pupil must master. However, children with a bilingual background and those who come from low socioeconomic homes or are of dull intelligence generally experience serious meaning difficulties much earlier.

Problems in Developing Meaning

Developing word meaning is one of the teacher's most important tasks. Even though the pupil possesses the meanings needed for the comprehension of the reading materials available to him, the teacher constantly

must expand the child's meanings and check upon the adequacies of his present meanings.

Dawson and Bamman (p. 113)⁴ tell the story of a five-year-old boy who complained to his father that Molly had called him stupid. Upon questioning the boy, the father found that young Richard wasn't concerned about being insulted, but rather about the wrong use of the word *stupid*. Richard complained: "Well, dad, you know. Stupid is a woman driving a car!"

Another father recently had a similar experience with his child. He had just bought her a box of Cracker Jacks. He asked her: "Is the popcorn good?" Her reply was: "This is Cracker Jack." He again asked her: "Isn't that popcorn?" Again she informed him that it was Cracker Jack, not popcorn.

Most of us have had similar experiences. Children frequently have not had sufficient experience to appreciate all the connotations of a word. Generally, even if they have a broader understanding of the word, they are content to settle for the first meaning that comes to mind. Poor readers especially tend to accept the first meaning that pops into their minds (p. 62).¹²

Children also many times have not learned that words can have more than one meaning. For example, the word *run* can mean "to move swiftly"; "to go back and forth" as in the sentence, "The boat runs between Georgia and New York"; to run as in an election; to win a race (the horse ran first); to turn a wheel; to run in debt; to run (trace) the story back to its source; to run (smuggle) counterband; and to run a store. These are only a few examples. In addition, we speak of a run of fish, a run of bad fortune, a run on the bank, the running brook, the ordinary run of people, or a cattle run.

Multiple meanings and pronunciations are not the only ambiguities of language that hinder communication and that make the apprehension of meaning difficult. Two words may have the same meaning; two words, although pronounced alike, may have different spellings and meanings; and words may have generic or specific meanings. Numerous idiomatic expressions also add to the reader's predicament. We speak * of "facing the music," "leaving no stone unturned," or "breaking the ice with someone."

Growth in meaning and vocabulary has many levels. The child must develop precision in meaning; he must become acquainted with multiple meanings; he must learn specific and generic meanings; he must interpret idiomatic expressions; and for successful speech and writing he must be able to call to mind the word needed and then apply it correctly.

Some children have not learned to look for meaning. Usually, pupils

* Durrell, (p. 254).⁵

will read the word, associate with it the sound of the spoken word, and take to it the meaning that they previously associated with the spoken word. However, this process does not always take place. Some pupils must be formally taught to make the inference.

Certainly, the grasping of meaning is important for learning. Educational psychologists have found that students prefer to deal with materials that have meaning. They apply meaningful data more easily, and they remember meaningful data for longer periods of time.

Conceptualization

In Chapter 1 we indicated that success in reading frequently depends on the pupil's ability to think of the word in an abstract way. This process we call conceptualization and the end result is a concept.

The formation of concepts consequently is of special interest to the reading teacher. The evidence shows that not all persons characteristically use conceptual thought. Experience with the *Vigotsky Test of Concept Formation* indicates also that concept formation is distinct from intelligence. Those who do best on this test are not necessarily the most intelligent. The evidence shows that children grow in their conceptualization.

The development of meanings or concepts follows a characteristic pattern. First, the child must learn to discriminate one object from another. Gradually, with repeated experience with similar objects, he acquires new layers of meaning and his perceptions become increasingly wider, richer, more diversified, and more complex.* He learns to identify the essential and the nonessential characteristics of the various realities in his environment. He proceeds from simple experience to concept via abstraction and finally arrives at categorization. He is able to categorize when he can group objects or experiences into classes.

Let us examine more closely the steps in the development of meaning.

1. Concepts are possible only when the pupil has had experience with the actual phenomena that are to be conceptualized (p. 136)¹¹. † Thus the initial step in the development of meaning is the differentiation of realities within one's environment or *experience with the concrete reality*. A cow is different from a horse.

The evidence indicates that there are stages in the development of perception. The initial perceptual level is characterized by reaction on a concrete level. At this level each object is distinct, having no commonalities with any other object.

* Perception thus is undirectional (always growing richer and irreversible).

† *Universalia non sunt res subsistes, sed habent esse solum in singularibus* (St. Thomas, *Contra Gentiles*, I, 64). Concepts are not existing realities. They exist only in the particular.

A higher level of reaction is termed "perceptual schematism" by Scheerer.¹⁵ The term refers essentially to the internal representation in perception. On this level the incoming sensory data are grouped into their most natural Gestalt or organization. The furry little animal with a white stripe down its back is perceived as a "skunk." The configuration takes on meaning. This meaning allows the perceiver to react with the experience of sameness upon subsequent contact with another object. Skunks can vary within a certain range (their inessential characteristics may change within a prescribed limit) and the perceiver will still react thus: "Ah, another skunk." If the variants are too great in the light of the perceiver's experience, no recognition will occur. The concept includes a certain unchanging core of experience—the invariant characteristic—and encompasses all possible variations.

The percept has a third meaning. An object can take on meaning by being characteristically associated with other objects or experiential events. Thus, "a bat is used to hit a ball." A word indicates the possession of an invariant core of meaning about which are grouped multiple related meanings. The context assigns a specific meaning to the word, a meaning that is not necessarily concrete nor simply schematic. Scheerer¹⁵ refers to this as an object's or word's "meaning sphere." The meaning on this level is experienced and is not acquired through abstraction proper. Scheerer notes that when asked to group objects, bright subjects will group metal tools into one pile because they are found in a hardware store. Only later will the concept of "metal" be used to sort the objects.

2. Concept formation requires accurate discrimination of essential and nonessential characteristics. The child may omit certain characteristics or he may include too many. Young children tend to overgeneralize. To a small child, all men are daddy and all women are mother. Older individuals may think of Negroes as shifters or Jews as shrewd. Errors of overgeneralization are errors in discrimination of similar objects, persons, or events. Only through experience will the child learn that one man is daddy, another his uncle, and another his grandfather.
3. The next stage in perceptual development is the concept itself. The concept is actually the end result of abstraction. Scheerer (p. 126)¹⁴ provides us with a definition of a concept. He writes:

Concepts are psychologically operative when the invariant relationship between the properties of an object, an action, or an idea is grasped, and when the communality of characteristics that is invariant can be abstracted from a variety of changing aspects.*

The concept in a sense annuls presence in order to arrive at representation (p. 307).² This is possible only through abstraction.

4. Finally, the child must learn to categorize. He must group his experiences into classes. Scheerer (p. 126)¹⁴ notes that abstraction makes the word a conceptual symbol.

The name for an individual object in daily life does not refer to the specific uniqueness of the object; the name signifies the object as a representative of a category—an exemplification of all the possible variations allowed for by its invariant characteristics.*

Figure 12-1 summarizes the process of perception. It illustrates how the perceiver moves from sensation to perception and more specifically from concrete percept to abstract perception, concept, and categorization.

Techniques for Teaching Meaning

Before discussing the techniques for teaching meaning, let us examine a few principles that should guide the teacher in the development of meaning. The following seem especially pertinent:

1. Each new level of meaning requires a corresponding broadening of experience with objective reality.
2. The quality of meaning is greatly influenced by the quantity and quality of previously acquired meanings and concepts. Thus the teacher must build upon the child's previous background of experience.

The teacher's major task in the development of meaning is to select the materials and experiences that will aid the child to become more discriminative and learn to generalize. Unfortunately, there is no clear-cut evidence that suggests what materials to use in the teaching of specific concepts. This leaves much to guess work and taxes the teacher's ingenuity.

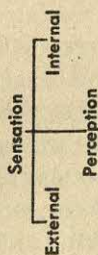
The major question then is this: How can the teacher help the child to develop meaning? Generally, the approaches to the teaching of meaning are twofold: (1) the direct-experience approach such as through the visitation of a farm or the acting out of an activity, or (2) the vicarious experience approach such as through pictures, storytelling, or the use of radio.

Chapter 7 discussed numerous activities of a direct and vicarious experience nature that are helpful in teaching meaning to kindergarten and first-grade youngsters.

However, since some third and fourth graders have not learned certain primary-level skills and since primary youngsters at times have advanced far beyond their grade level, the teacher must constantly adapt skill

* Martin Scheerer, "Cognitive Theory," *Handbook of Social Psychology*, Volume I, ed. by Gardner Lindzey (Reading, Mass.: Addison-Wesley Publishing Company, 1954). Reprinted by permission.

Figure 12-1



Concrete Percept	Perceptual Schematism	Contextual Perception	Perception of Differences	Concept	Categorization	Abstract
(Level I)	(Level II)	(Level III)	(Level IV)	(Level V)	(Level VI)	
Simple discriminations of concrete reality. A rabbit is differentiated from a skunk without actual identification of the object as a skunk.	The configuration takes on meaning—the furry animal is termed a skunk and upon subsequent experience with a similar object the perceiver will say, “Ah, another skunk.” This stage is often confused with abstraction. A child may see similarities but doesn’t think abstractly because he doesn’t see the differences.	The context in which the word is used determines the meaning. At this level there is an extension of meaning. Thus, a chair can be used to wash the ceiling or to send a man to his death. Words will take on new meanings dependent upon the context in which they are used.	This is the beginning of concept formation. Perceiver can see similarities among dogs generally, but discriminates between collies, mongrels, rat terriers, etc. Perceiver who cannot operate on this level will under- or overgeneralize.	The concept is the product of abstraction. It requires: (1) perception of communality or sameness. (2) perception of invariant characteristics. (3) abstraction of invariant characteristics from a variety of changing aspects.	The perceiver names the object and can think of it as representative of a class or category—as an exemplification of all possible variations permitted by its invariant characteristics.	

teaching to the individual pupil's level of achievement. The so-called first-grade comprehension skill needs to be constantly maintained. Thus, the techniques discussed in Chapter 7 warrant repetition. They are:

1. Experience with the concrete object
2. Labelling
3. Learning to read pictures
4. Conversation and story telling
5. Description, riddle, rhyme, and puzzle games
6. Audio-visual aids
7. Dramatization, marionette and puppet shows, pageants, and operettas
8. Constructing and using picture dictionaries
9. Use of oral and written directions
10. Fitting objects and words into categories

Each of these techniques can be applied on upper-grade levels. For example, "Learning to Read Pictures" may be "Interpreting Charts, Graphs, and Maps" on the fourth- and fifth-grade level. "Labelling" may consist of labelling instruments in a science laboratory.

Durrell *et al.*^{*} have published materials for the intermediate level designed to develop categorization skills. Entitled *Word Analysis Practice*, the materials require the pupil to read words and to classify each one under one of three suggested categories. The intermediate series consists of three sets of thirty cards each. Set one contains 720 words and is usable at low fourth-grade level; sets two and three contain 1200 words each and may be used with pupils on the fourth- to the sixth-grade level.

Let us now look at more advanced meaning skills. Perhaps the first of these is the need for increased competency in the use of the context to arrive at the appropriate meaning.

STUDY AND ANALYSIS OF THE CONTEXT

The child's first reading experiences encourage him to use the verbal context in which the word occurs to decipher the meaning of the sentence. Reading teachers have always suggested that the child should look at the word, and that he should not guess; now the teacher encourages the child to see whether the word makes sense in the sentence.¹⁰ The teacher today suggests that the pupil *anticipate* and *predict* meaning. He should think along with the author. If youngsters learn to anticipate probable meaning, they also have learned a most useful means of word identification.

^{*} Donald D. Durrell, Helen A. Murphy, Doris U. Spencer, and Jane H. Catterson, *Word-Analysis Practice* (New York: Harcourt, Brace & World, Inc., 1961).

Skill in using the context needs constant refinement, and indeed it becomes increasingly more valuable as the pupil advances through school. Some pupils rely too much on the context. They pay little attention to the details. Their reading makes sense but sometimes it is not the meaning intended by the writer. Their counterparts are those readers who are so preoccupied with details that they read a word into the sentence that makes little or no sense.

McCullough¹⁰ suggests that the pupil use pictures, his own experience, the verbal context, indications of comparison and contrast, the accompanying synonym, the summarizing word (the word is a summary of the ideas just presented or about to be presented), or the definition as clues to what the word means.

The pupil gradually needs to expand both the number and the quality of the meanings that he attaches to a single word. Many words, even in the "simplest" of books, have more than one meaning. Frequently only by understanding the verbal context can the pupil select the meaning intended by the writer.

Here are some simple means for teaching the importance of the context in meaningful reading.

The pupil may learn to anticipate meaning through exercises that require the addition of a single word to complete the meaning of the sentence. For example, the sentence, "The boy fell the stairs," allows for little deviation in meaning. Other exercises might be: "Father bought the apples at the (store, story)." "A dog is an (animal, vegetable)." "There are (three, tree) boxes on the table." "He is sick. Call a" "Pass the salt and" "Pamela picked up a (house, hammer, harvest)." "Each boy wore a new (dress, uniform, apron)."

Sometimes the exercise presents a sentence that is complete but that contains a wrong word. The pupil is asked to eliminate the wrong word and to substitute a correct one in its place. Examples of such exercises may be: "Father brought the apples at the store"; "There are tree boxes on the table"; or "Pamela picked up a flour."

An exercise like the following teaches both the usefulness of the context in apprehending the correct meaning and the fine shades of meaning that a word may have.

Read the following sentences. The word *run* is used in each of the sentences, but it has a different meaning in each. Write the meaning of the word *run* in the blanks provided.

1. The boat runs between Georgia and New York. *sails between*
2. The two-year-old filly ran first in the Belmont Stakes. *won the race*
3. I ran the story back to its source. *traced*
4. We saw a run of fish. *school of fish*
5. The man had a run of bad fortune. *series of bad luck*

6. The brook runs by the cottage. *lies near*
7. He belongs to the ordinary run of people. *common kind*
8. He runs contraband between the Middle East and Europe. *smuggles*

The sentence context frequently gives the meaning of a word by either defining it or by giving a synonym for the word. For example:

Read the following sentences. Select the proper meaning for the underlined word from the four suggested to you.

1. Johnny drew a picture of Mary on the blackboard.
 - a. to pull or cause to follow
 - b. to attract
 - c. to represent by drawing, to delineate
 - d. to withdraw
2. The horse drew a wagon behind him loaded with garden vegetables.
 - a. to pull or cause to follow
 - b. to attract
 - c. to represent by drawing, to delineate
 - d. to withdraw
3. There are many utensils or instruments that one uses daily in a kitchen, a bakery, or on a farm.
 - a. a vessel used in a kitchen
 - b. a tool or instrument
4. The pupils are studying the structure of the bat. It is the only placental mammal that is capable of flying.
 - a. a stick or club used to hit a ball
 - b. a placental mammal
 - c. a gliderlike bomb
5. The seats upon which we were to sit were littered with paper and other trash. In fact, they were absolutely filthy.
 - a. to put into disorder
 - b. a stretcher for carrying sick people

At the upper grade levels the pupil should learn to identify the writer's style. Shaw (p. 239) ¹⁶ points out that a writer's rhetorical and grammatical contrivances characterize his writing. "Like the ice cream cone, which is both container and confection, a writer's contrivances not only support ideas, but also are digestible themselves." * The writer has so many peculiar characteristics that upon reading some of his work again the reader finds that he has a better conception of what the writer is trying to say. The mood of the writer colors the meaning of what is written and frequently can be identified only by reading between the lines.

The reader operates in the context of a special writer, but to get the most out of what he reads he also should become familiar with the

* Philip Shaw, "Rhetorical Guides to Reading Comprehension," *The Reading Teacher*, 11 (April 1958) 239-243. Reprinted by permission.

rhetorical devices used in a poem, play, short story, essay, novel, or bibliography.¹⁶ The title, topical headings, topic sentences, graphs, and summarizing sentences are additional clues to meaning. For example, the title at the head of an article helps the reader anticipate what is to come.

Finally, the structure of the phrase, sentence, and paragraph serves as a clue to the fuller meaning of what is written.

Rhetorical terms of coherence are also guides to reading comprehension of a paragraph. Conjunctions are common links. The correlative conjunctions (both—and, not only—but also, either—or) mark pairing of ideas. Subordinating conjunctions signal special connections, as cause-effect relationships (because, since, so that), conditions (if, unless, although), contrast (whereas, while), and time relationships (as, before, when, after). Besides pure conjunctions, certain adverbs have conjunctive impact (however, therefore, nevertheless, hence, similarly, conversely, accordingly), as have directive expressions (for example, on the other hand, in conclusion, in other words) (p. 243).¹⁶

These words and phrases have meaning only as parts of sentences or paragraphs. The sentence itself has meaning in the larger context of the paragraph.

In such a sentence as "Ed was talkative while Bill remained taciturn,"¹⁰ the sentence structure provides the parallelism and the contrast necessary for understanding the word *taciturn*.

SYNONYMS AND ANTONYMS

The pupil reaps much benefit from exercises with the synonyms of words. Initially this exercise is oral. The teacher asks: "What word has the same meanings as *big*?" Some typical words for this exercise are: *about, absent, act, afraid, again, alike, all, alone, angry, answer, baby, bad, beat, beautiful, beg, begin, or believe*. This exercise is more meaningful when the pupil uses the word in a sentence and then substitutes his suggested synonym in its place.

Matching of words with definitions is another exercise of this nature. The following exercise is an example:

	Choices
This is a piece of clothing	handkerchief
This comes out of the chimney	blanket
This is a place in which to pray	medicine
This we use to cover ourselves	smoke
This we use when we blow our noses	dress
This we use when we are sick	church

¹⁶ Philip Shaw, "Rhetorical Guides to Reading Comprehension," *The Reading Teacher*, 11 (April 1958) 239-243. Reprinted by permission.

Antonyms are words opposite in meaning to certain other words. The pupil perhaps best learns meanings for words such as *fat, father, come, hot, high, up, wide, today, night, big, hate, old, back, warm, boy, long, white, yes, yesterday, happy, shut, stay, dark, after, asleep, cry, ugly, under, and empty* by contrasting them with their opposites. The teacher may ask the pupil to select the antonym for a given word from a list of three or four words. Thus: Warm—hot, cold, cool, chilly.

Sentences such as the following teach opposites:

1. Today the sky is bright, but yesterday it was
2. Do you like sweet or pickles?
3. Do you want to be or last in the parade?

QUALIFYING WORDS

The meaning of a sentence sometimes is dependent upon key qualifying words. Such words are: *all, always, almost, many, more, most, less, few, only, and none*. Additional words are *nearly, likely, probably, in all probability, true, false, some, usually, frequently, never, sometimes, little, much, great, and small*. The ability to interpret these words is especially helpful in taking objective tests.

The following exercises teach pupils the effect that these words have on the meaning of a sentence:

1. Provide sentences containing a qualifying word (The table was set with *many* kinds of fruit) and ask pupils to study the exact meaning of the sentence. In the sentence, "Johnny fell into deep water," how deep is deep?
2. Have pupils write pairs of sentences in which the qualifying words mean about the same thing. Let them differentiate the meaning in the two sentences. For example:
 1. a. Johnny had a small toy.
b. The toy was so tiny that Johnny had difficulty playing with it.
 2. a. Most boys like to fish.
b. Almost all boys like to fish.

OVERWORKED WORDS AND PHRASES

Overworked words and phrases are words that have lost much of their meaning. Some common words are: *divine, grand, great, keen, awful, nice, lovely, perfect, swell, terrible, thing, lot, fit, and wonderful* (p. 60).¹

Similes and metaphors such as "shaking like a leaf," "white as snow," "I could eat a horse," or "raining cats and dogs" probably are overworked.

The following exercise will help pupils to become more discriminative in their choice of words.

Substitute a more descriptive word for the underlined word in each sentence or rewrite the sentence keeping the meaning intended.

1. The party was divine.
2. We had a grand time.
3. Isn't he keen?
4. She looked simply awful.

Analogous to overworked words, but not the same, is the use of words by youth today. Here are such words including the meaning that they are intended to convey:

big daddy	an older person
bread	money
tube	television
cool	wonderful
who rattled your cage?	who asked for your opinion?

HOMONYMS

Homonyms are words that are sounded alike but that have different spellings and meanings. They frequently lead to recognition and meaning difficulties. To illustrate their difference in the early grades the teacher must use them in meaningful context. Thus, the difference between *blue* and *blew* is brought out in the following sentences:

- (1) The wind *blew* down the house.
- (2) Mary wore a *blue* dress.

Following is a list of some common homonyms:

ate—eight	hair—hare	rain—rein	vane—vein—vain
base—bass	haul—hall	rap—wrap	
be—bee	heel—heal	read—reed	wade—weighed
bear—bare	here—hear	read—red	waist—waste
beat—beet	hour—our	road—rode	wait—weight
berth—birth			wave—waive
blue—blew	made—maid	sail—sale	way—weigh
bow—bough	mail—male	sea—see	week—weak
break—brake	meet—meat	seen—scene	whole—hole
buy—by		sew—so	wood—would
	new—knew	sight—site—cite	write—right
course—coarse	night—knight	some—sum	wrote—rote
	no—know	steak—stake	
dear—deer	not—knot	steal—steel	
do—dew		sun—son	
	one—won		
fair—fare	owe—oh	tail—tale	
fir—fur		their—there	
flee—flea	pain—pane	through—threw	
flower—flour	pair—pare	to—too—two	
forth—fourth	peace—piece		
four—for	plane—plain		
	principal—principle		

ROOTS, PREFIXES, AND SUFFIXES

Being able to break a word into its root, prefix, and suffix is a valuable skill in developing meaning for a word. This, however, is not enough. The pupil also must know the meaning of the root, prefix, and suffix.

In teaching the pupil the structural skill here indicated the teacher must follow definite steps. He must show the pupil that most two- and three-syllable words are composed of a root, prefix, and/or suffix. He next develops meaning for the words root, prefix, and suffix.

The root is the main part of a word. It is the reservoir of meaning. The prefix is that something which is put before the main part of a word or that which is put at the beginning of a word. The word, prefix, is composed of a root and a prefix. It comes from the Latin root, *figere*, meaning to put or fix and the Latin prefix, *prae*, meaning before or at the beginning of.

The teacher should demonstrate to the pupil that prefixes change the meaning of a word, much as an adjective changes the meaning of a noun. In the sentence, "The test was very difficult," the word difficult is an adjective, and it changes the meaning of the word test. The test could have been described as easy. Prefixes work in a similar way. Circumnavigate is composed of the prefix *circum* and the root *navigare*. *Navigare* is a Latin word meaning to sail. The prefix *circum* means around, and the entire word, circumnavigate, means to sail around. The prefix *circum* thus changes the meaning of the root by indicating that in this instance *navigare* isn't just sailing, but is actually a particular type of sailing.

The suffix is another part of many two- or three-syllable words. It comes at the end of the word. It comes from the Latin words, *sub* and *figere*, meaning to add on. The suffix frequently indicates what part of speech the word is. Thus, *ly* in badly is a suffix and usually indicates that the word is an adverb. The *ion* in condition is a suffix and usually indicates that the word is a noun.

Four combinations of root, prefix, and suffix are immediately indicated:

- (1) Root by itself as in *stand*
- (2) Prefix + root as in *prefix*
- (3) Root + suffix as in *badly*
- (4) Prefix + root + suffix as in *insisting*

Finally the pupil may be taught that when two roots are combined to form a word, the word is termed a compound word.

Studies have shown that a few Latin and Greek roots are very helpful in deciphering the meanings of thousands of words. Approximately

twenty prefixes account for something like 85 per cent of the prefixes used in words. There also are some key suffixes.

Here is a list of twenty common Latin roots:

<i>Infinitive</i>	<i>Meaning</i>	<i>Examples</i>
<i>agere, ago, egi, actum</i>	to act, do, arouse, to set in motion, drive, transact, sue	agent, act, action, actuality, actual active, actor
<i>capere, capio, cessi, cessum</i>	to give ground, to yield, to seize	seceded, cede, secession
<i>ducere, duco, duxi, ductum</i>	lead	duct, conduct, ductile, abduct, seduce
<i>facere, facio, feci, factum</i>	to do, make	fact, factory, benefit, factor, fashion, factual
<i>ferre, fero, tuli, (tolerabilis tollere, tolerare), latum</i>	bear, carry	ferry, oblation, tolerate, ferry, tolerant, toleration, transfer
<i>legere, lego, legi, lectum</i>	chose, collect, gather, read	elect, reelect, select, lector, lecturer, legendary
<i>mittere, mitto, misi, missum</i>	send	emit, mission, remit, submit, admit, missive
<i>movere, moveo, movi, motum</i>	move, arouse, excite	move, mobility, movable, movement, mover, movie
<i>plicare (complicare), complico, complicavi, complicatum</i>	to fold, confuse	complicate, duplicate, pligate, complication
<i>ponere, pono, posui, positum</i>	put, place	pose, opposite, post, position
<i>portare, porto, portavi, portatum</i>	carry	comport, port, export, import, report
<i>regere, rego, rexi, rectum</i>	to rule, guide, direct	direct, regular, rector, rectory, rex
<i>scribere, scribo, scripsi, scriptum</i>	to write	script, transcript, manuscript, inscription
<i>specere, specio, spexi, spectrum</i>	to see	specious, specter, spectre, inspect
<i>stare, sto, steti, statum</i>	to stand, remain, endure	statue, insist, stationary, station
<i>tenere, teneo, tenui, tentum</i>	hold, have	tenuto, tenet, tenor, tenaculum
<i>tendere, tendo, tentendi, tentum (tensum)</i>	stretch out, extend, march toward	tend, tendency, tension, tender
<i>venire, venio, veni, ventum</i>	to come	event, convene, convention
<i>videre, video, vidi, visum</i>	to see	view, vision, visible, visit

Greek roots also are helpful in arriving at the meanings of words. Here are nineteen Greek roots, of which the first two are by far the most common.

<i>graphein—grapho,</i> <i>gegrapha</i>	to write, inscribe	graph, phonograph, mono- graph, graphic
<i>legein, lego</i>	to tell, to say	(see <i>logos</i>)
<i>aer</i>	air, atmosphere	aerodronics, aerate
<i>autos</i>	self	automatic, automobile
<i>bios</i>	life	autobiography, biography
<i>geos</i>	earth, land	geologist, geometry
<i>heteros</i>	other	heterodox, heterogeneity
<i>homoios</i>	like, same	homogeneity, homogenous
<i>logos</i>	word, thought, study of	geology, biology
<i>micros</i>	small	microscope, microcosm
<i>monos</i>	alone, only, once, one	monochord, monochrome
<i>philos</i>	friend	Philadelphia, philanthropy
<i>phone</i>	sound, tone, voice	telephone, phonic
<i>physis</i>	nature	physics, physical
<i>polys</i>	many	polygamy, polygamist
<i>pseudos</i>	lie, false	pseudonym, pseudoclassic
<i>psyche</i>	breath, life, spirit	psychometry, psychopath
<i>sophos</i>	wise, clever	philosopher, philosophy
<i>telos</i>	end	telephone, telegraph,
<i>tele</i>	far	television

The pupil will learn to use roots in figuring out the meaning of words through an exercise similar to the following.

Here is a list of nine roots: *act* (to act), *capt* (to seize), *duct* (to lead), *mov* (to move), *port* (to carry), *script* (to write), *vis* (to see), *graph* (to write), and *auto* (by itself). Look now at the series of words below and identify the root that is used in each of the three words. Write the meaning of each of the words, using the dictionary when necessary.

1. active, actor, action, . . . *act* . . .
 - a. quality of being active, busy, energetic.
 - b. one who acts, a doer.
 - c. an act, the process of acting.
2. captor, captive, captured
3. abduct, ductile, deduct
4. movable, movement, mover
5. export, import, report
6. transcript, inscription, manuscript
7. visual, vision, visible
8. monograph, biography, graphic
9. automobile, automatic, autobiography

Twenty prefixes are used rather frequently. They are:

<i>ab, a</i>	away from, from	<i>ad, a, ap, at</i>	to, toward
<i>be</i>	by	<i>com, co, cor,</i>	with
<i>de</i>	from	<i>con, col</i>	
<i>epi</i>	upon	<i>dis, di</i>	apart
<i>in, en, im, em</i>	in, into	<i>ex, e</i>	out of

<i>inter</i>	between	<i>in, ir, il</i>	not
<i>non</i>	not	<i>mis</i>	wrong
<i>pre</i>	before	<i>ob, op, of</i>	against
<i>re</i>	back	<i>pro</i>	in front of
<i>trans</i>	across	<i>sub</i>	under
		<i>un</i>	not

Of less importance are:

<i>ante</i>	before	<i>circum</i>	around
<i>contra</i>	against	<i>intra, intre</i>	inside, within
<i>per</i>	through	<i>post</i>	after
<i>amphi</i> (ambi)	around, on	<i>super</i>	above
	both sides	<i>anti</i>	against
<i>dia</i>	through	<i>peri</i>	around
<i>syn</i>	together		

One of the best ways of helping the student to increase his vocabulary is to run the root word through the prefix-assembly line.

intra		ad
inter		ab
in (not)		mis
in		non
ex		ob
epi		per
dis	Root	peri
dia	Word	post
de	"Port"	pre
contra		pro
com		re
circum		sub
be		super
anti		syn
ante		trans
amphi		un

Running the root word *port* through this sequence suggests the following words: comport, deport, export, import, report, transport, and support.

Another exercise requires the pupil to work out the meaning of a word when the prefix and its meaning are given. Thus:

	Prefix	Meaning of Prefix	Meaning of Word
transport	trans	across	.....
deduct	de	from, away from	.....
import	in	into	.....
subscript	sub	under	.....
invisible	in	not	.....
inactive	in	not	.....
unable	un	not	.....
adduce	ad	to, toward	.....
compose	com	with	.....
export	ex	out of	.....

A third exercise requires the pupil to identify the word when the meaning and the prefix are given. Thus:

- a. to send out of the country (ex)..... export
- b. to send into the country (in).....
- c. to turn a pupil away from school (ex).....

There also are many suffixes that are helpful in working out the meanings of words. The following are common:

able, ible	capable of, worthy	durable, credible
age	act or state of	bondage, dotage
acy	quality of	lunacy, piracy
al, eal, ial	on account of, related to	judicial, terminal
ance, ence,	act or fact of doing,	violence, temperance
ancy, ency	quality, state of	
ant	quality of one who	reliant, truant
ar, er, or	agent	scholar, author
dom	state, condition, fact of being	wisdom, kingdom
en	made of, to make	woolen, strengthen
eur	one who	amateur
ful	full of	graceful, blissful
fy	to make	falsify
ible, ile	capable of being	legible, docile
ier	one who	carrier
ic, ac	like, made of	maniac, metallic
ism	fact of being	barbarism
ity, ty	state of	unity, ability
ize	to put to, to make	memorize, modernize
less	without	motionless
let, et	small	cornet, hamlet
ly	like, characteristic	ably
ment	state or quality or act of doing	accomplishment
ness	state of	blindness
ous, ious, eous	abounding in, full of	joyous, courteous
tion, sion, xion	action, state of being, result	condition, tension
ty	quality or state of	liberty
ward	toward	southward

An exercise like the following develops the pupil's knowledge of the suffixes.

Using the list of suffixes and the meanings provided, select the word that says the same thing as the underlined words in each of the following sentences.

- 1. The dog was watching the child carefully lest he wander onto the street.
 - a. watchful
 - b. watcher

- 2. The sky was without a cloud.
 a. cloudless
 b. cloudy
- 3. The man did not move a muscle. He waited for the judge's verdict.
 a. movable
 b. motionless
- 4. Are you the man who will help me with this job?
 a. helpful
 b. helper
- 5. The United States is constantly forced to bring its armed forces up to modern standards.
 a. modern
 b. modernize

Programmed learning is an effective aid in teaching structural skills. The following is an example:

Most two- and three-syllable words are composed of a root, prefix and/or suffix: thus inscription is composed of in (prefix), script (root), and ion (suffix). The root *script* (meaning writing) gives the essential meaning of the word; the prefix *in* modifies or changes the basic root meaning and indicates that the writing is upon something; and the suffix *ion* indicates the part of speech of the word. Here, the word is a noun.

Read the items on the right side of the page and try to answer the question. All answers are either completions or a choice of one of three possibilities. Then slide the piece of cardboard on the left down the page, one question at a time. The correct answer will be shown.

- | | |
|------------------|---|
| | 1. One-syllable words contain only a (a) prefix
(b) root (c) suffix |
| 1. root | 2. The is that part which is written before the root. |
| 2. prefix | 3. The prefix changes the of the root word. |
| 3. meaning | 4. The prefix <i>in</i> may mean <i>not</i> . The meaning of the word inactive then is |
| 4. not active | 5. The prefix <i>in</i> may also mean <i>in</i> or <i>into</i> . In the sentence "The army will induct ten men," the meaning of the word <i>induct</i> is (a) not to lead (b) to take into (c) not to take. |
| 5. take into | 6. The prefix, <i>in</i> , meaning <i>not</i> , may be written as <i>in</i> , <i>im</i> , <i>ir</i> , or <i>il</i> . The meaning of <i>illegible</i> is then |
| 6. not legible | 7. The meaning of <i>irreligious</i> is |
| 7. not religious | 8. The meaning of <i>immaterial</i> is |
| 8. not material | 9. The various forms that <i>in</i> takes to say not are,,, and |

9. im, in, il, ir 10. The prefix, *in*, meaning *in* or *into*, may be written as *en*, *im*, or *em*. The meaning of *enchained* in the sentence "The man was enchained" is the man was put
10. in chains 11. The meaning of *enclose* is to close or hem
11. in 12. The meaning of *immigrate* is to
12. migrate into

Write the meanings for the following words. Check your meaning in the dictionary.

embark	encompass	imbibe
embargo	enjoin	immerse
employ	enlist	immortal
encircle	enroll	immobile

COMPOUND WORDS

The pupil also must learn that sometimes root and root are combined to form compound words. Some of these keep the basic meaning of each root; others have a completely new meaning. Some simple compound words teachable at the primary level are:

bedbug	cobweb	hamlet	onset	titbit
bellhop	cutup	hellcat	pell-mell	tiptop
bigtop	dishpan	hubbub	pigpen	tomcat
bigwig	forbid	humbug	popgun	tomtom
bulldog	forget	into	sunlit	upon
carhop	godson	mudsill	sunset	upset
cannot	gunman	offset	sunup	wigwag

On more advanced levels the pupil should learn more difficult words, beginning with those compounds that keep the basic meaning of each word making up the compound. For example, a classroom is a room where class is held. Other words useful in teaching this skill are: byways, breakdown, campfire, cornstalk, cowboy, earthquake, eyelash, hillside, hilltop, limestone, railroad, rosebush, watchman, weekend, steamboat, workbook, snowshoes, sawdust, sandhill, and newsboy.

Finally, the pupil needs to learn the difference between compounds that are written as one word and compounds that are hyphenated. Whenever two or more words are combined into a single adjective modifier, the words are joined by a hyphen. The compound numbers from twenty-one to ninety-nine always are hyphenated.

The following examples illustrate the use of the hyphenated compound:

1. He is a well-meaning man.
2. She is a self-conscious person.

FIGURATIVE AND IDIOMATIC EXPRESSIONS

We already have indicated that numerous idiomatic expressions also add to the reader's predicament. We speak ^o of "facing the music," "leaving no stone unturned," or "breaking the ice with someone." We suggest that someone's "hands were tied" or that he is "cutting the ground from under someone." We speak of a "Jack-of-all-trades," a "devil-may-care" attitude, and of someone being "penny-wise-and-pound-foolish." We speak of George Washington as the "father of our country"; we are as cozy as a "bug in a rug"; the wind "whistles"; and the rain "patters"; someone jumps as if "he had been shot" or runs out of the door "like a shot." A bill is thrown into the legislative hopper; a candidate sweeps the field; the United States is a melting pot; and someone almost dies laughing.¹ Embler ⁶ lists numerous similar metaphors: to be down-and-out; to be looked down upon; to be at the bottom of the heap; high living; ladder to success; social climber; too keyed up; to settle down; down to earth; going to the root of the matter; big wheel; great guy; soft drink; hot-headed; cold-hearted; be in hot water; frozen with fear; square meal; dead pan; kiss of death; to be out of line; open minded; and heavy heart.

Groesbeck (p. 75),⁸ in an analysis of four third-grade readers, *Looking Ahead* and *Climbing Higher* by Houghton Mifflin Company and *Finding New Neighbors* and *Friends Far and Near* by Ginn & Company, found that these contained 424 figurative expressions. Two fourth-grade readers (*High Roads* by Houghton Mifflin Company and *Roads to Everywhere* by Ginn & Company) contained 845 figurative expressions. The fifth-grade readers contained an even greater number.

Obviously, the elementary pupil has a real need to master figurative reading skills. Unfortunately, most children interpret expressions literally. They seem to be unconscious of both the figurative use of language and of their own inaccuracies in interpretation.⁸

Figurative language differs from the literal or standard construction; figures of speech are the various types of departures from the literal form. Figure 12-6 lists the major figures of speech.

Here are some sentences taken chiefly from Groesbeck † ⁸ which illustrate the various figures of speech:

1. George Washington was the *Father of our country*. (metaphor)
2. I laughed until I thought *I would die*. (hyperbole)
3. He jumped *as if he had been shot from a cannon*. (hyperbole)

^o Durrell (p. 254).⁵

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Figure 12-6. Figures of Speech

Figures of Resemblance	Figures of Contrast & Satire	Others
Allegory	Antithesis	
Onomatopoeia	Epigram	Hyperbole
Personification	Irony	Euphemism
Metaphor	Apostrophe	Synecdoche
Simile		
Metonymy		

An *allegory* is the prolonged metaphor: eg. *Pilgrim's Progress*.

Onomatopoeia is the use of words whose sounds suggest the meaning.

A *metaphor* is simply an analogy or an expression of comparison: unlike the simile, the metaphor does not use *as* or *like* (You're a clumsy ox.).

Personification is the endowment of an inanimate object or abstract idea with personal attributes.

A *simile* compares two objects or actions and usually joins them with *as* or *like*: for example: My car goes like the wind.

Antithesis is the contrasting of ideas.

An *epigram* is a short, terse, satirical, or witty statement.

Metonymy is the use of one word for the other, the first word being suggestive of the other: for example: The woman keeps a good table.

An *hyperbole* is an exaggeration; *euphemism* is the substitution of an inoffensive expression for one that is unpleasant; *apostrophe* is the addressing of the living as dead or the absent as present; and *synecdoche* is the use of the part for the whole.

4. I was just *tickled to death*. (hyperbole)
5. She was *as happy as a lark*. (simile)
6. She turned *white as snow* at the news. (simile)
7. He raced *like lightning* down the street. (simile)
8. Her face turned *as red as a beet*. (simile)
9. The summer months sure *fly by*. (personification)
10. He was so angry he was *boiling*. (hyperbole)
11. Her eyes *sparkled like stars*. (simile)
12. The squirrel *froze* in its tracks. (metaphor)
13. The floods *clapped their hands*. (personification)
14. Long *fingers* of early sunlight came through the trees. (metaphor)
15. I came within sight of the *forks of the road*. (metaphor)
16. "*Zzzinggg! Yowww!*" howled the saw. (onomatopoeia and personification)
17. Neighbors from *near and far* gathered there. (antithesis)
18. That's a *fine way to act* when company is here! (irony)
19. The moon *looked* through a clear bit of sky. (personification)
20. *Arise dead sons* of the land and sweep the enemy from our shores. (apostrophe)
21. The *pen* is mightier than the sword. (metonymy)
22. She *gave her hand* in marriage. (synecdoche)
23. He didn't *raise a finger*. (synecdoche)

The pupil may be taught figurative reading skills with exercises similar to the test questions in the *Figurative Language Matching Test*.⁸ The

following items are taken from this test.* The pupil is required to pick from the three choices the one that best explains the underlined words in the context of the sentence.

- Item 1, Grade 3. They had so much fun playing that the minutes flew by.
 a. Minutes can fly like birds.
 b. Time went very fast.
 c. The minutes were riding on an airplane.
- Item 23, Grade 3. He raced like lightning down the track.
 a. He was frightened by the lightning.
 b. He ran fast down the track.
 c. He tried to run faster than the lightning.
- Item 4, Grade 4. Sara stood glued to the ground.
 a. She did not move.
 b. She stepped in some glue.
 c. Her feet were fastened tightly to the ground.
- Item 8, Grade 5. Minneapolis and St. Paul are twin cities.
 a. They look very much alike.
 b. Many twins live in these cities.
 c. They grew up side by side.
- Item 23, Grade 5. We hung on by the skin of our teeth.
 a. We hung on to the skin of our teeth.
 b. Our teeth were hanging by the skin.
 c. We just barely hung on.

Other exercises require the pupil:

1. To read poetry or prose and to underline the figure of speech.
2. To indicate what type of figure of speech it is.
3. To complete statements like the following: "I'm hungry enough to eat
 a"

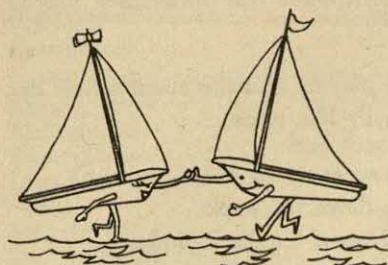
Exercises requiring the pupil to complete similes are especially helpful (p. 153).¹³ For example:

black as	clear as
wise as	sober as
white as	hungry as
busy as	sly as
quick as	happy as

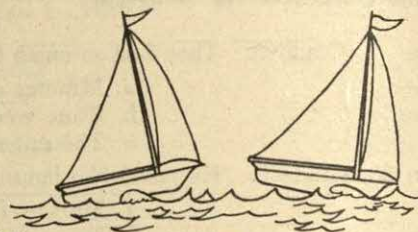
Perhaps, the meaning of figurative language can be best illustrated by pictures. Look at the samples on p. 344. In each instance the pupil is asked to check the picture that best gives the meaning of the underlined words.

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1. Boats were dancing up and down on the waves.*



A

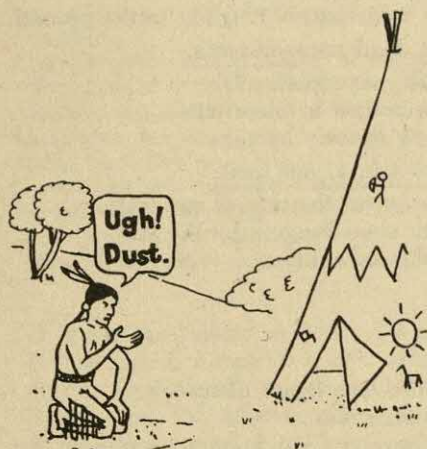


B

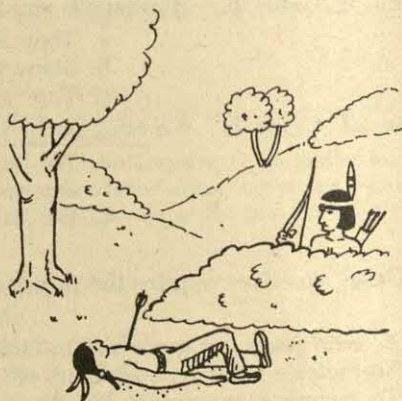
A ____

B ____

2. Another Indian bit the dust.



A

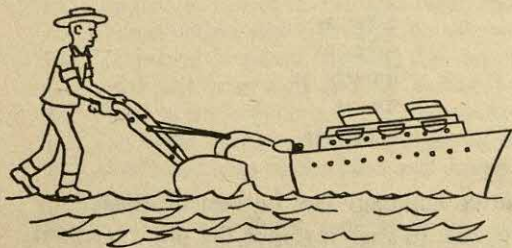


B

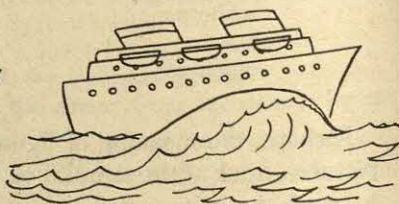
A ____

B ____

3. The ship plows the sea.



A



B

A ____

B ____

* The sentences and illustrations are from Groesbeck⁸ and are used with her permission.

DEVELOPING SKILL IN USING PUNCTUATION MARKS
AS CLUES TO MEANING

Punctuation frequently is looked upon merely as a discipline in writing rather than as a help in reading.³ Yet, the writer punctuates not for himself but for his reader. Punctuation is not only a set of rules to be learned but rather a means to facilitate the grasp of meaning.

Punctuation⁷ replaces the intonation pattern in speech—the pauses, pitch, and stress. Intonation in speech is used to convey surprise, anger, or satire; it also indicates whether the utterance makes a statement, gives a command, or asks a question. In written language the comma and semicolon indicate a pause. The comma is used also to set off a non-restrictive clause, to note a series, and to set off an appositive. The period is used to end a statement; the question mark, to end a question; and the exclamation mark, to end a command. The question mark indicates that in speech there would be a sharp rise in voice and then a drop back to the normal level. The colon indicates that something additional is about to be written.

Here are a few exercises that teach the skill of reading punctuation:

1. a. Mary has a kitten.
- b. Mary has a kitten?

This teaches the difference between a sentence that tells and one that asks. The only different elements in the two sentences are the question mark and the period.

2. a. The school, kitchen, cafeteria, and auditorium are offbounds during regular school hours.
- b. The school kitchen, cafeteria, and auditorium are offbounds during regular school hours.

The comma after the word, school, in sentence *a* falsifies the intended meaning.

3. a. Will you send me a catalog?
- b. Will you send me a catalog.

Sentence *a* asks a question; sentence *b* is a polite request disguised as a question and thus is followed by a period.

STUDY OF THE DICTIONARY, TEXT GLOSSARIES, AND WORD LISTS

Glossaries become important as soon as children engage in any type of content-area reading. The teacher discusses the new words that will be met in today's lesson. He identifies the word through its visual form, its pronunciation, accent, and meaning. The discussion is completed when the word is met in its contextual setting. In this way teacher and pupil develop their own glossary.

Although the pupil has learned to use the context and other clues to decipher the meaning of words, he sometimes must go to the dictionary. In the intermediate years the dictionary becomes a very useful tool. To be able to use it correctly, the pupil needs:

- (1) to develop alphabetization skills. He should be able to arrange words in alphabetical order according to the first, the first two, and the first three letters.
- (2) to understand guide words.
- (3) to understand dictionary symbols: the breve, the macron, the circumflex, the tilde, etc.
- (4) to use the dictionary to work out the pronunciation of words, to help him in his spelling, and to identify the accent of words, the derivation of words, and the part of speech that the word is.
- (5) to use the dictionary to learn the various meanings of words.

Simple exercises designed to teach alphabetization are (69-71):¹

- a. Put the following letters into alphabetical order:
 1. b, k, q, r, w, c, a.
 2. c, r, l, m, y, z, f.
- b. Write in the spaces provided the letter that immediately precedes and follows the one given:

1. k	3. g
2. r	4. f
- c. Check as true or false each of the following statements:

1. <i>M</i> comes before <i>l</i> :	True	False
2. <i>R</i> comes after <i>q</i> :	True	False
- d. Alphabetize the following:

speech	cook
analogy	flower
root	material
nature	derby

This exercise requires simple alphabetization according to the first letter. The next exercise requires the pupil to go to the second letter.

- e. Alphabetize the following:

cook	chunk	out
careful	city	

The pupil also needs to learn to analyze the definitions given in a dictionary. A good definition puts something into a class of things and then differentiates that something from all other members of that class. Thus the word rocket is defined as a firework (this is the class concept) that consists of a case filled with combustible material and that is fastened to a guiding stick (these are the aspects that differentiate it from other fireworks).

An exercise requiring the pupil to look up the word in the dictionary and to note both its class aspects and its *differentia* is helpful in teaching the dictionary as a device for broadening meaning. Thus:

<i>Term</i>	<i>Class</i>	<i>Differentia</i>
raccoon		
buffalo		
porcupine		
bronco		
coyote		

Another exercise requires the pupil to associate the meaning of an underlined word in a sentence with previously-given meanings for that word. Thus:

Seat:

- _____ a. way of sitting
- _____ b. the thing on which one sits
- _____ c. a center of government
- _____ d. the buttocks

LaCrosse is the county seat of Rush County.

STUDY OF WORD ORIGINS AND CHANGE

Numerous other vocabulary exercises help to enlarge the vocabulary and broaden meanings. The most common are: a study of word origins; study of the new terms recently added to the language; exploration of the encyclopedia; and the study of word lists.

A recent article by Warren¹⁷ has outlined a program for leading the pupil beyond the simple fact that words mean something. It is a program designed to familiarize the pupil with the nature, origin, and growth of words.

Warren recommends that we *begin with the origin of surnames*. For example, names like Baker, Butler, Binder, Bishop, Cook, Brewer, Dechant, Dreher, Engel, Geist, Guard, Hunter, King, Miner, Miller, Pfeifer, Rider, Sander, Schuchman, Schumacher, Shearer, Skinner, Smith, Spicer, Taylor, Teller, Walker, and Weaver identify occupations.

Other surnames represent objects: for example, Ball, Bell, Bone, Coffin, Burr, Craine, Cross, Flax, Hall, Beach, Fort, Gabel, Glover, Grass, Hood, House, Hull, Keller, Kolb, Krug, Meadows, Money, Moon, Park, Peck, Penney, Rice, Rohr, Sack, Staab, Stump, Temple, Trail, Wells, Wing, Winter, Wolf, and Wood.

Some surnames identify certain characteristics of an object or person: Thus: Belle, Breit, Fair, Good, Goodheart, Gross, Joy, Lang, Long, Petty,

Power, Sauer, Stout, Swift, Triplett, Shade, Unrein, Young, Younger, and Klein. Other surnames are actually first names: Alexander, Daniel, Dick, Dickey, Floyd, Francis, George, Henry, Judy, Martin, Morris, Nelson, Paul, Ray, Thomas, Vernon, Walter, and Williams. Some identify colors; Black, Braun, Brown, Gray, Green, Roth, Schwartz (Schwartzkopf), and White. And finally, some are animal names: thus, Beaver, Bee, Bird, Crow, or Ochs.*

An interesting St. Patrick's Day activity might be to delve into the origins of Irish names. The following samples are illustrative: Begley (grandson of the little poet); Bolger (light-complexioned or one who made leather bags); Bourke (one who dwells near a stronghold); Brennan (grandson of a raven); Callahan (contention); Carey (grandson of a dark-complexioned man); Cassidy (curly haired); Cavanaugh (comely); Clancy (ruddy warrior); Connell (high or powerful); Dempsey (proud); Dever (successful one); Donovan (grandson of a little brown poet); Doyle (grandson of a black foreigner); Duffy (black); Egan (son of fire); Enright (unlawful); Fallon (ruler); Finnegan (fair); Flanagan (the little ruddy man); Gary (hunting dogs); Gillispie (servant of the bishop); Gleason (the little green man); Haggerty (unjust); Hallihan (handson); Halloran (stranger from across the sea); Kane (warrior); Keenan (ancient); MacArthur (valorous); McCarthy (loving); McEvoy (yellow-haired boy); McGrath (prosperity); McGuire (pale); O'Day (good luck); O'Grady (noble); O'Hara (sharp); Riley (sportive); and Whelan (little wolf).

The teacher also may find it useful to familiarize the student with the history and origins of the names of streets, parks, rivers, countries, and states. Each of them has a history.

The *second step* in studying word origins may be an analysis of the foreign origin of many words. The Dutch, the French, the Germans, and the Italians have given us many words. Let us list just a few: Italian (soprano, piccolo, piano, contralto); French (carburetor, chauffeur, coupe, beau, chateau, trousseau, chamois, machine, boudoir, bouquet, barrage, croquet, sachet, ballet); and German (kindergarten, waltz, sauerkraut, wiener). Words of Latin and Greek origin are so numerous that a list is not necessary.

A *third phase* of the study of origins is an analysis of how words disappear, change, or appear. Language is man's tool and he has always used it for his convenience. He has discarded certain words, added others, and frequently has associated new meanings with old words.

* Most of the names listed are found in Hays, Kansas. The incidence of German names is immediately obvious.

The last twenty years have witnessed a lot of language activity. Numerous new words have been coined (17).⁹ Here are just a few:

ack-ack	amtrac	audiophile	babushka
bamboo curtain	bazooka	beachhead	bebop
bellyland	big wheel	blitz	boogie-woogie
brainwashing	calypso	cloverleaf	crew cut
de-icer	deltiology	discophile	emcee
freeway	genocide	ghetto	goldbrick
grassroots	hardtop	Hi Fi	intercom
junkie	liquidate	megaton	me-too-ism
Molotov cocktail	to needle	oscar	pedal pushers
pony tail	poodle cut	prefab	rabbit ears
rev	rhubarb	satellite	schmoe
snow (television)	spelunker	split-level house	supermarket

Warren¹⁷ notes that the pupil needs to look upon good English as up-to-date English. The dictionary thus is not the ultimate authority. It lists acceptable and unacceptable words (illit., arch., and obs.) People decide what is correct.

STUDY OF TECHNICAL VOCABULARIES

Finally, the pupil should become familiar with the technical vocabularies of the content areas. The following words, for example, are basic in science:

acid	assimilation	chlorochloroplasts
adaptation	astigmatism	chromosomes
adenoids	atom	cirrus
adulteration	audiogram	coccus
aeration	axon	cochlea
aerobic	bacillus	combustion
afferent nerves	bacteria	commutator
aileron	barograph	compound
alimentary canal	barometer	condensation
alkali	buoyancy	convection
alternating current	caisson	cornea
amoeba	calorie	corpuscles
ampere	calorimeter	cululus
amplifier	calyx	cyclone
aneroid barometer	cambium	cytoplasm
anode	candle power	dendrites
anther	capillaries	diaphragm
antibiotic	cathode	direct current
antitoxin	cell	distillation
anvil	cellulose	dry cell
aorta	centrifugal	dynamo
aqueous humor	cerebellum	eclipse
armature	cerebrum	efferent nerves
artery	chlorophyll	electrode

electroplating	magnet	plasma
element	mass	pollen
embryo	meridian	protein
endosperm	microorganism	proton
enzymes	microscope	protoplasm
epidermis	mineral	pupil
erosion	mold	quantum
fertilization	molecule	radar
flagella	nebula	radiation
frequency	neuron	radioactive
fulcrum	neutron	respiration
fungi	nimbus	retina
galaxy	nitrates	sepals
germ	nucleus	spectrum
gland	ohm	spirillum
gravitation	optic nerve	stamens
hemoglobin	orbit	stigma
hormones	organism	stirrup
horsepower	osmosis	stratus
humidity	oxidation	toxin
humus	oxide	transformer
hybrid	oxidize	turbine
induction	paramecium	vaccine
inertia	parasite	vein
iris	penicillin	villi
kinetic energy	peristalsis	voltage
larva	petiole	watt
larynx	photosynthesis	xylem
lever	phosphorescent	yeast
lumen	pistil	
lymph	pith	

Similar technical vocabularies should be developed for other content areas. Only by knowing them can the pupil read with meaning in those areas.

A Summary of Techniques for Improving Vocabulary

The intermediate-grade pupil needs to have before him a constant reminder and summary of the techniques useful in building a vocabulary. A summary chart containing some of the following principles or techniques may be hung in the classroom.

How to Improve Your Vocabulary

1. Broaden your experiences. Be alert for new ideas and always learn to describe them in clean terminology. Read and discuss. Listen and write!
2. Develop a regular and systematic method of studying words.
3. Keep a vocabulary notebook, or 3 x 5 cards, in which you write the words you want to master. Include the pronunciation and meanings of the word.
4. Learn first the common meaning of the word. Gradually expand your knowledge to include special meanings.

5. Study the word in its context.
6. Associate the word with a mental picture.
7. Break the word into its basic elements—the root, prefix, and suffix. In the case of a compound word break it into its simple words.
8. Associate the root word with its synonyms (words with similar meanings) and antonyms (words with opposite meanings).
9. Study carefully those words that are pronounced alike, but that have different spellings. Such words are called homonyms. Examples of these words are: f-a-re—f-a-i-r.
10. Use the new words in writing and in speech.
11. Develop an interest in the origin of words.
12. Introduce yourself to the new words in the language:
for example: boycott, carpool, de-icer, or three-D.
13. Learn the fine shades of meanings of words. Instead of the word little, you may at times wish to use small, minute, microscopic, puny, tiny, petty, dwarfed, stunted, diminutive, Liliputian, short, or miniature.
14. Finally, study the technical vocabulary of your subject matter.

Summary

To be a reader the child must be able to identify words and to associate some meaning with them. Unfortunately, he cannot do this unless he has had the opportunity to develop meaning. Generally, meaning is acquired through some form of direct or vicarious experience. Perhaps our emphasis on learning from experience is too great. We might emphasize more learning from instruction and this has been the intent of this chapter.

Ideas and experiences can be expressed in many ways. Each writer has his own modes of expression. Because of this the teacher must develop in children the ability to gather meaning from the context and to decipher the author's rhetorical and grammatical contrivances.

Questions for Discussion

1. What are some of the hindrances to the easy development of meanings for words?
2. What are the advantages of meaningful learning?
3. What is conceptualization?
4. Describe the characteristic pattern in the development of meanings or concepts.
5. Distinguish the three meanings for percept.
6. What are some appropriate techniques for teaching meaning at the kindergarten level?
7. What are some additional appropriate techniques for teaching meaning at the primary and intermediate levels?
8. Discuss and illustrate the various ways that the context may be used to infer the meaning of a word.
9. Discuss the value of film-readers.

10. Discuss ways of developing meaning for figurative expressions.
11. What dictionary skills should the pupil develop in the intermediate years?
12. What is meant by the "class" and "differentia" aspects of a definition? Illustrate your answer.

Basic Reading Principles

1. Association of meaning with a symbol is impossible unless the person has had some experience with that something for which the symbol stands.
2. The percept is representational and evolves without the benefit of intentional reflexive thought.
3. Most children have little difficulty with the concepts and the vocabulary needed for beginning reading.
4. Differences in abstracting ability or in the ability to think in categories differentiate the superior reader from the poor reader.
5. Facility in conceptualization is a function of previous experience in concept formation. The progression in concept formation is from the simple to the complex; from diffuse to differentiated; from egocentric to objective; from specific to general; and from inconsistent to consistent.
6. Concepts are possible only when the pupil has had experience with the actual phenomena that are to be conceptualized.
7. Concepts are formed when the individual perceives the communality of characteristics among a variety of changing aspects. He perceives likenesses and differences.
8. The more generic is the meaning to be developed, the more is experience necessary.

13

ADVANCING THE PUPIL'S COMPREHENSION SKILLS

The goal of all reading is the comprehension of meaning. The *initial* step in this process (which we discussed in the previous chapter) is the association of an experience with a given symbol. This is absolutely necessary, but it is the most elemental form of comprehension. Complete meaning is not conveyed by a single word. The good reader learns to interpret words in their contextual setting. He comprehends words as parts of sentences, sentences as parts of paragraphs, and paragraphs as parts of stories.

Meaningful reading includes not only a literal interpretation of an author's words, but also an interpretation of his mood, tone, feeling, and attitude. The reader must comprehend the implied meanings and prejudices of the writer. He must recognize summary statements, make inferences and applications, and see the broader implications of a passage. He must familiarize himself with the time and place in which the words were written. He must use the periods, commas, quotation marks, and questions as aids to interpretation.

Comprehension Skills

Comprehension involves a complex of abilities. The good comprehender possesses:

1. The ability to associate experiences and meaning with the graphic symbol.
2. The ability to react to the sensory images (visual, auditory, kinesthetic, taste, smell) suggested by words.
3. The ability to interpret verbal connotations and denotations.
4. The ability to understand words in context and to select the meaning that fits the context.
5. The ability to give meaning to units of increasing size: the phrase, clause, sentence, paragraph, and whole selection.
6. The ability to detect and understand the main ideas.
7. The ability to recognize significant details.
8. The ability to interpret the organization

9. The ability to answer questions that are answered in a printed passage.
10. The ability to follow directions.
11. The ability to perceive relationships: part-whole; cause-effect; general-specific; place, sequence, size, and time.
12. The ability to interpret figurative expressions.
13. The ability to make inferences and to draw conclusions, to supply implied details, and to evaluate what is read.
14. The ability to identify and evaluate character traits, reactions, and motives.
15. The ability to anticipate outcomes.
16. The ability to recognize and understand the writer's purpose.
17. The ability to recognize literary and semantic devices and to identify the tone, mood, and intent or purpose of the writer.
18. The ability to determine whether the text affirms, denies, or fails to express an opinion about a supposed fact or condition.
19. The ability to identify the antecedents of such words as *who*, *some*, or *they*.
20. The ability to retain ideas.
21. The ability to apply ideas and to integrate them with one's past experience.

This chapter, being intended to help the pupil to move from elemental comprehension to the higher-level skills mentioned above, is organized in this way:

I. Developing Comprehension Skills

- A. Word Meaning
- B. Phrase Meaning
- C. Sentence Meaning
- D. Paragraph Meaning
- E. Reading the Context
- F. Reading for the Main Idea
- G. Reading for Details
- H. Reading the Organization
 1. Summarizing
 2. Outlining
 3. Underlining
 4. Note Making
- I. Reading for Evaluation
- J. Reading for Learning

II. Location Skills

- A. Knowing a Book
- B. Library Sources

III. Reading Charts, Maps, Graphs

- A. Map Reading
- B. Graph Reading
- C. Table Reading
- D. Reading Charts
- E. Reading Diagrams

Developing Comprehension Skills

Of major importance for interpretative reading is a purpose for reading. The purposeful reader is an interested reader. If the pupil is

to understand what he is reading, he must know why he is reading. He must know whether to read for information, to solve a problem, to follow directions, to be entertained, to obtain details, to draw a conclusion, to verify a statement, to summarize, or to criticize. As already mentioned, learning to comprehend involves a complex of skills. In the previous chapter the first of these skills was discussed. Let us add a few words here about the significance of word meaning.

WORD MEANING

Studies generally indicate that vocabulary is highly related to comprehension. Vineyard and Massey³¹ found that even when intelligence is held constant there still is a sufficiently high relationship between comprehension and vocabulary proficiency to justify attempts to improve comprehension through vocabulary training. To comprehend, the pupil must have a knowledge of word meanings and be able to select the correct meaning from the context.⁵

Fortunately, it appears that children have a far greater knowledge of the meaning of words than we usually credit to them. First graders generally have a speaking vocabulary of over 2500 words²⁶ and possibly a recognition vocabulary of over 20,000 words.^{23, 24} Certainly, no teacher ever taught a child even most of the words that he knows.

Certain principles should guide the teacher in the development of word meanings:⁹

1. *Most words have more than one meaning.* Generally, the more frequently a word is used, the more meanings it tends to have.
2. *The specific meaning elicited by a word is a function of the context in which the word occurs.* This is not only the verbal context but also the cultural context.
3. *The number of meanings actually elicited by a word depends on the number and quality of experiences that the reader has associated with the word.*
4. *The pupil has numerous means at his disposal for developing word meanings.* These were discussed in Chapters 7 and 12. He may use the context. The word may be explained to him by giving a synonym, by classifying the word, and by pointing out differences and similarities. Or, the meaning of the word may be illustrated through activities, picture clues, structural analysis and the dictionary.

An exercise similar to the one used in Figure 13-1 employing programmed materials for use with teaching machines has many possibilities in the teaching of meaning.

Tape three in the *Listen and Read Series* (pp. 12-15; pp. 20-25)^{1, 2}

Figure 13-1. A Barber's Discovery *

1	Once there lived in a village a very fine barber named Garo. As he served his customers, Garo was always glad to give them advice. And as long as there was hair to cut or a beard to trim, he never ran out of things to do (); say ().
	say (X)
2	In those days a barber traveled from house to house like a peddler to do his work, so old Garo had a chance to observe just what was occurring. For this reason his advice was considered poor (); fair (); excellent ().
	excellent (X).
3	Because Garo gave so much advice, people thought he was very wise indeed. And you may be sure that Garo agreed with them. He felt that he had no chance (); equal (); friends ().
	equal (X);
4	One November afternoon Garo was resting beneath a great oak tree. Yawning sleepily, he happened to glance upward. From the branches of the tree hung hundreds of tiny, brown acorns. At the first winter wind they were ready to fall (); burst ().
	fall (X)

emphasizes the importance of the sense appeal of words. Words make the reader hear, see, taste, smell, and touch. The following words are examples:

<i>Touch</i> (feeling)	<i>Sight</i>	<i>Sound</i>	<i>Taste</i>	<i>Smell</i>
cold	green	mellow	sweet	fresh
warm	rippled	bang	sour	pungent
hot	spotted	crash	bitter	stuffy
rough	glistening	thud	salty	fragrant
bumpy	ruffle	bellow		choking

The underlined words in the following sentences are examples of words that appeal to the senses and that encourage meaningful reading.

1. "Icicles hanging from cabin roofs dripped continuously, and the snow beneath was peppered with holes where the drops of water fell in the softening snow."*
2. "The sap was watery thin and sweet and icy cold." †
3. "Even though spring was on the way, the fire felt good in the snapping, stinging cold of an early morning in the woods." ‡

* Mabel O'Donnell, *Singing Wheels, The Alice and Jerry Basic Readers*. "Spring's in the Air." Harper & Row, Publishers, Evanston, Illinois, 1957, p. 342. Reprinted by permission.

† *Ibid.*, p. 343. Reprinted by permission.

‡ *Ibid.*, p. 344. Reprinted by permission.

PHRASE MEANING

Phrase reading is not synonymous with word reading. A phrase is more than the sum of the individual words that it contains. The meaning of phrases like "to spin a yarn," "to throw away one's money," or "to pitch a tent" cannot be ciphered from individual words. In the previous chapter we gave numerous examples of similar idiomatic and figurative phraseology.

In developing the pupil's phrase-reading skill an exercise like the following is useful:

*Phrase**Synonym*

1. big wheel
2. great guy
3. soft drink
4. hot-headed
5. cold-hearted

SENTENCE MEANING

In Chapter 8 we noted the importance of the sentence as the basic unit of meaning. Meaningful reading implies an understanding and an interpretation of language patterns. The full meaning of a sentence depends on the punctuation, the word order, the grammatical inflections signaling tense, number, and possession, and on such key words as *because* or *nevertheless*. Until the reader translates correctly the printed text into the intonation pattern of the writer, he may not be getting the meaning intended.

Reading materials usually do not come in single word or phrase units. The meaning of a sentence is not obtained by piling up, as it were, the meanings of individual words. The pupil must learn to master the skills of relating the various words that form a meaningful sequence in a sentence (p. 232).³ Unfortunately the dynamics of converting single word meanings into the total thought of a sentence or paragraph has not been sufficiently investigated.

The elementary pupil must learn that all sentences have a "who" or "what" and they *tell* or *ask* something. These skills are taught through exercises like the following:

1. The fell down the stairs.
2. The sat in the tree.
3. The drank his bottle.
4. The boy down the stairs.
5. The bird in the tree.
6. The baby his bottle.

Tape five in the *Listen and Read Tapes* and the accompanying workbook exercises (pp. 23-29; pp. 31-33)^{1, 2} develop the pupil's ability to listen and read for who, what, when, where, how, and why. Most sentences, and obviously most paragraphs, answer these questions. The reader may realistically be described as a news reporter. The good reporter answers the above questions in his story and the good reader identifies the answers in print.

The following exercises taken from the *Read and Listen Workbook* (p. 33)² teach the pupil to look for answers to who, what, when, where, and how in his reading:

Read the sentences below. Then answer the questions that follow in the blanks provided.

1. Late last night a burglar entered the home of Adam Mullins at 22 Clay Street apparently to steal several valuable paintings.

Who or what?
 What happened?
 Where?
 When?
 Why?

2. A large oak tree was blown down by the wind across Sardis Street during the storm last week.

Who or what?
 What happened?
 Where?
 When?
 How?

3. The Federal Government seized three counterfeiters by identifying bogus bills during yesterday's raid on the underworld in the downtown area.

Who or what?
 What happened?
 Where?
 When?
 Why or how?

4. The convicted man was led from city court yesterday because of his shouts and insults.

Who or what?
 What happened?
 Where?
 When?
 Why or how?

5. A large airliner crashed in flames near Roundtop Mountain early this morning apparently due to an explosion.

Who or what?

² Copyright 1961 by Educational Developmental Laboratories. Reprinted by permission.

What happened?
 Where?
 When?
 Why or how?

Sentences are parts of paragraphs receiving both their full meaning from the context in which they occur and giving meaning to the sentences that surround them. Thus, some sentences are introductory or lead-in sentences; some are transitional sentences; and some are concluding sentences. An exercise similar to the following will teach the pupil to identify the type of sentence being used and to read for implied meaning:

Select from the three choices (I, T, C) the one that best describes each of the following sentences.

I—Introductory Sentence
 T—Transitional Sentence
 C—Concluding Sentence

- 1. There are three chief reasons for studying government.
- 2. Finally, democracy is based upon the acceptance of these responsibilities.
- 3. In addition to knowledge and skills there must be the willingness to work with one's talents.

PARAGRAPH MEANING

Paragraphs are basically a series of sentences that give one basic idea. All the sentences are written in such a way that they relate to one another.

Tapes eight and nine in the *Listen and Read Series* of tapes (pp. 40-50)¹ and the accompanying workbook exercises (pp. 45-51)² present ways of teaching paragraph interpretation. Here are some:

1. Have pupils select from a series of sentences the one that doesn't stay on the topic.

It was the last of the seventh. The Mexican juniors were about to bring home the Little League baseball championship. It was ten degrees below zero in Canada. The crowd was on its feet eagerly waiting for the final pitch of the game.

2. Have pupils select the topic sentence or the sentences which best summarize the main idea of a paragraph.

The western Indian tribes feared Kit, but they respected him. They knew his word was good. They knew that once he had given his word he would keep it. Although he spent his life fighting them, the Indians knew they would find him fair in his dealings with them.*

* Frank L. Beals, *Kit Carson*, American Adventure Series. Harper & Row, Publishers, Evanston, Illinois, 1941, p. 10. Reprinted by permission.

3. Have pupils identify the technique that the writer is using to get his point across. Is he piling up details? Does he open with a generalization and then goes on to list supporting details? Does he use repetition or contrast to get his point across? Does he use a chronological sequence?

1. *Piling Up Details?*

Kit Carson was a great scout and Indian fighter. He was also an explorer, a hunter, and a trapper. His real name was Christopher Carson, but he became famous as Kit Carson.*

2. *Chronological Sequence:*

'I am twenty years old,' said Kit. 'For three years I have been traveling the plains. I went with a wagon train from Missouri to Santa Fe. I lived there for a while. Then I went with a train to El Paso and back.' †

READING THE CONTEXT

Although contextual reading skills have been discussed in previous chapters, a few comments seem in place.

The development of the contextual reading skill begins in the kindergarten. The teacher reads a short anecdote and lets the pupil predict the ending. Proficiency here requires careful reading, the ability to hold in mind what one has read, and to make certain inferences.

Context offers the reader many types of clues to word, sentence, and paragraph meaning. It may provide a definition of a word, may relate it to previous experiences, may associate it with a whole word whose meaning is known, may provide a synonym, and it may indicate the mood and the tone that the writer attaches to the word.

READING FOR THE MAIN IDEA

The aim of this chapter is to help the child to bring maximum meaning to the printed page. The chapter on speech development pointed out the need of helping the pupil to state the main idea. In teaching listening emphasis is on the importance of listening for the main idea. The reader also must learn to read for the main idea.

The ability to identify the main idea is necessary for interpretation and understanding of what is written. It is based on an accurate comprehension of the word, the phrase, and the sentence. All the other interpretative reading skills are secondary. Children who do not get the main idea cannot identify the theme of a paragraph, do not understand the

* *Ibid.*, p. 1. Reprinted by permission.

† *Ibid.*, p. 6. Reprinted by permission.

implied meanings, and usually cannot organize or summarize what they have read.

Dawson and Bamman (pp. 178-179) * ⁷ give the following list of suggestions in order of difficulty for helping the child to find the main idea:

1. Read a short selection and select the best title, from several listed for the selection.
2. Read a short selection and give it a title, in the child's own words.
3. Read the title of a chapter and attempt to predict what the author is going to say.
4. Read the introduction of a chapter and note carefully just what the author has outlined.
5. Read the summary of a chapter and tell, in a simple sentence, what the chapter covered.
6. Read a paragraph and reduce it to a simple sentence, by paraphrasing the author.
7. Rapidly skim the titles and the subheads of a selection and attempt to list details which will give a general impression of the entire selection.
8. Read the first and last sentences of an entire selection.
9. Turn each subhead or subtitle into a question. The answer to that question will be the main idea of the paragraph or paragraphs.
10. Give the children a newspaper and present them with a clearly stated problem. Ask them to skim rapidly for a solution to that problem. In the beginning, it is best to confine the exercise to a single selection from the newspaper.

The following exercises illustrate how some of these suggestions may be put into practice:

1. *Select the Best Title*

It was a summer's day late in the 1870's. High in the southern sky the hot noonday sun blazed down upon ripening grainfields and far-reaching stretches of unbroken prairie. Not a breeze rippled the prairie grasses! Not a birdcall broke the hot, dead stillness in which ears attuned to listening might have heard the corn grow. †

Which of the following titles best fits the paragraph?

- a. The Stillness of a Hot Summer Afternoon
- b. A Hot Afternoon

2. *Find the Answer to a Question*

Neither sunlight, an east window, nor the boom of Fourth of July could bring the stir and brightness of a summer's morning into that bedroom! Nothing could give a cheery look to the dull brown wall-paper, the heavy marble-topped dresser and table, and the long cur-

* Mildred A. Dawson and Henry A. Bamman, *Fundamentals of Basic Reading Instruction*. © 1959, Longmans, Green & Co., Inc. Courtesy of David McKay Co., Inc. Reprinted by permission.

† Mabel O'Donnell, *Engine Whistles, The Alice and Jerry Basic Readers*, "Puffing Billy," Harper & Row, Publishers, Evanston, Illinois, 1957, p. 5. Reprinted by permission.

tains which began at the window tops and reached out over the carpet-covered floor beneath.*

- a. Was the room bright and cheery?
- b. What sentences support your answer?

Robinson¹⁹ suggests that the pupil first learn to identify the main idea of a sentence. He may be taught this skill by being required to underline key words. He then moves to identifying the key sentence in a paragraph. This is the topic sentence. However, some paragraphs do not have a single sentence that summarizes the main idea. Thus, the third step consists of teaching the pupil to make an inference from a series of sentences as to what the basic idea is. Eventually the pupil needs to learn that a main idea may be spread over two or three paragraphs.

READING FOR DETAILS

After the child has had some success in reading for and stating the main idea, he is ready to read for details. Reading for details becomes important after the third grade, especially in science, geography, arithmetic, home economics, and history.

Learning to follow directions through reading essentially is reading for details. In directions every little step is significant. The pupil must give full attention and must look for a definite sequence of data (p. 182).⁷ This process is particularly important in doing arithmetic and in carrying out experiments.

Initially the child may learn to arrange pictures in proper sequence to tell a story. Learning how to develop a simple paragraph is a further step in this process. The pupil may be taught how to read to answer a specific question. He is tested on a paragraph to see whether he remembers significant details.

The following activities promote reading for detail:

1. Have children look at a picture and then let them describe what they saw.
2. Ask children to note the details in a paragraph after you have stated the main idea.
3. Have children read a paragraph into which have been inserted some irrelevant sentences and let them identify these sentences.
4. After the pupils have read a paragraph, let them choose from a prepared group of sentences those that agree or disagree with the paragraph.

* Mabel O'Donnell, *Engine Whistles, The Alice and Jerry Basic Readers*, "Fourth of July." Harper & Row, Publishers, Evanston, Illinois, 1957, p. 41. Reprinted by permission.

5. Present three paragraphs and let the pupils determine which of the last two supports and logically follows the first paragraph.
6. Analyze a written paragraph into its main and supporting ideas by making a formal outline of it.
7. Let children read and then carry out simple directions on how to do something or how to play a game. Children may develop direction charts. Common activities are: how to care for a plant, pet, or garden; how to cook a simple dish; how to make a dictionary; how to use the reading table.
8. Ask questions about the paragraph; multiple choice, completion, and true-false questions are especially appropriate in eliciting answers concerning the details of a paragraph.
9. Develop a chart, diagram, or map of the sequence of events.

The following exercises illustrate some of these techniques:

1. *Answer Specific Questions Over a Paragraph*

The only parts of the animals that had a market value were the hides and fat, or tallow. If the ranchers could have sold the meat, too, then they would have made a lot of money. But there were no railroads to ship the cattle to markets in the north and east.*

- a. Which parts of animals had a market value?
- b. Why did meat not have a market value?

2. *Put a Check Mark After Each of the Following Sentences that Might be Included under the topic, "Life on the Farm."*

1. Johnny liked the sound of milk shooting into his pail.
2. The sound of railroad cars passing by his window lulled him to sleep.
3. Frank woke each morning with the rooster's first call.

READING FOR THE ORGANIZATION

The good reader also comprehends the organization of what is being read. He thinks with the reading material, outlining it as he goes along. He sees the relationship between the main and subordinate ideas and arranges these in some logical order. He utilizes materials from many sources and is able to draw conclusions.

Reading in the content areas especially depends upon proficiency in this skill. Textbooks have a characteristic paragraph organization. The topic sentence sets the theme of the paragraph. There follows a sequence of details. The paragraph is concluded by a summarizing sentence.

* Shannon Garst and Warren Garst. *Cowboys and Cattle Trails*, American Adventure Series, Harper & Row, Publishers, Evanston, Illinois, 1948, p. 5. Reprinted by permission.

Numerous activities help the pupil to learn how to organize what he is reading. The following are suggestive:

1. Ask the pupil to retell a story that he has read.
2. Have the pupil group a series of pictures in a logical or chronological sequence.
3. Let the pupil group a series of details about a main idea.
4. Let the pupil develop an outline for a story, with headings and subheadings.
5. Have the pupil arrange records, directions, or ideas in a sequential order.
6. Have the pupil assemble various bits of information and group them into an informative story.

Listen and Read Tape number ten (p. 51),¹ entitled "Following the Author's Organization," presents an effective way for teaching organization on the Junior High level. The techniques suggested may be adapted to lower levels. Specifically, the pupil should be taught to watch for time sequences in paragraphs (indicated by such words as *next*, *while*, *when*, *later*), to look for organization according to position or degree, to look for categorization (hoofed mammals, winged mammals, toothless mammals, and sea mammals), and to look for comparisons, contrasts, and cause-and-effect organizations.

Let us illustrate a few of these:

Organization According to Time-Sequence

John's pretty, young mother had died when he was a baby. He wished he could remember her. His father had been a preacher. He had died in 1861 when John was four years old. The boy could dimly remember him as a tall, kindly man.*

Organization According to Contrast

Among the many varieties of wheat are winter wheat and spring wheat. Winter wheat is planted in the autumn, spring wheat is planted in the spring. Winter wheat is harvested about three weeks earlier than spring wheat. Spring wheat is planted in the colder areas such as the Dakotas and Canada. Winter wheat is most common in less severe winter areas such as Kansas, Nebraska, and Oklahoma.

Organization on a Cause-Effect Basis

What causes a cyclone, a tornado, and a hurricane? A cyclone is caused by a low-pressure area in which the winds move counterclockwise in a spiralling upward fashion. A tornado also is a low-pressure area but smaller and more violent than a cyclone. A hurricane is a huge mass of air whirling about a calm center.

* Shannon Garst and Warren Garst, *Cowboys and Cattle Trails*, American Adventure Series, Harper & Row, Publishers, Evanston, Illinois, 1948, p. 4. Reprinted by permission.

The organizing of what is read also is an important part of effective learning or integrative reading. There are various approaches to this task. Summarizing, outlining, note making, and combinations of these have been recommended.* The specific approach used is not so important as that the student perceives the interrelationship between the various elements.

SUMMARIZING

Summaries help to preserve the essential facts and the main ideas in capsule form. They are especially necessary when the pupil is not using his own book.

Summaries are particularly useful when reading literature, essays, or social science materials; they are not so useful in chemistry, physics, or biology. A summary or synopsis is all that may be necessary in reading the former. As for the latter, a summary usually is more lengthy than the original.

Exercises similar to the following teach the summarizing skill:

1. *Have pupils select the main idea of a paragraph from four possible choices:*

Transportation developed step by step. In the beginning man used logs to move down the stream. The lake or stream was the first roadway. Then man taught the animal to pull heavy loads on sledges. The land became the natural roadway. Finally, man discovered the wheel. This led to the invention of the stagecoach.

A good summary for the paragraph might be:

- a. Man used logs to move down the streams.
 - b. The problems of transportation were overcome by the invention of the wheel.
 - c. Transportation passed through the stages of log travel, sledge travel, and stagecoach travel.
 - d. The land became the natural roadway.
2. *Have pupils note how various writers introduce the topic or summarizing idea.* In the following paragraph the writer asks a question and his answer to the question summarizes the paragraph:

What is success? Was Napoleon successful? What about Stalin, Hitler, or Michelangelo? Is that man successful who accomplishes the task that he set for himself? In other words, does success consist in getting what one wants? I doubt it. I believe success consists in being the best that one can be. Success must be measured by its effects upon man and society. The emphasis must be on being the best, not necessarily on getting the greatest rewards. The good plumber is a success; the lousy philosopher is a failure. And, the good plumber is an asset to both himself and society.

* For a summary of the research on outlining, underlining, note taking, and summarizing see Sartain,²² *Educational Leadership*, 16 (December 1958), 155-160.

A good summary for the paragraph might be:

- a. That man is successful who accomplishes the task that he sets for himself.
 - b. Success consists in being the best that one can be and it must be measured by its effects on man and society.
 - c. Rewards are significant aspect of success.
3. *Have pupils read poetry and select the best summary from a series of four choices.* Poetry usually presents one main idea or moral and that main idea summarizes what the poem has to say. In poetry all the words are so interrelated that they dovetail into one main idea. Thus:

Not enjoyment, and not sorrow,
Is our destined end or way:
But to act, that each to-morrow
Find us farther than to-day.

—*Psalm of Life*, Longfellow

A summary of this poem might be:

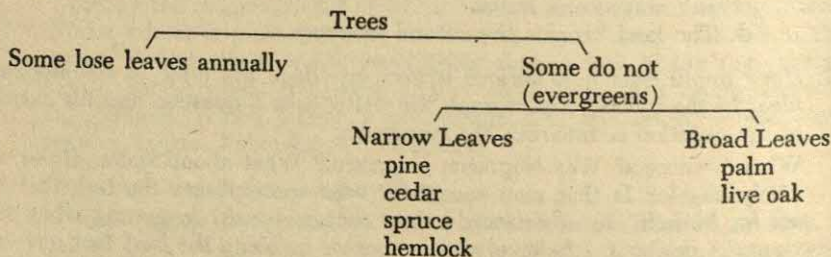
- a. Man must take what comes.
 - b. Man can do something about his destiny.
 - c. All of us are doomed to sorrow.
4. *Have pupils outline graphically a paragraph on a scientific topic.* Scientific materials are difficult to summarize. Graphs, charts, maps, formulas, and definitions rarely can be summarized.

Trees

There are two kinds of trees. Some have leaves that drop off during one particular season of each year. Others keep their leaves for much longer periods of time. The latter are called evergreens.

Evergreens are of various types. Those with very narrow leaves are the pine, the cedar, the spruce, and the hemlock. Broadleaved evergreens are the palm and the live oak.

Graphical Outline



Other techniques useful in developing the summarizing skill are:

1. Have pupils summarize a message so that it would be suitable for sending by telegram (reduce a fifty-word message to a twenty-word message).
2. Have pupils write summaries of stories that they have read.
3. Have pupils select from three summaries that which best summarizes a series of paragraphs.

4. Have pupils identify the moral of a statement or paragraph. For example:
A goat had wandered from the herd, and the young goatherd tried to get him back. After calling in vain, he threw a stone that broke one of the goat's horns.
The alarmed lad wept and begged the goat not to tell his master. But the goat replied, "My broken horn will tell the story, even if I do not utter a word." *
The moral might be: "Facts speak louder than words."
5. Have pupils organize and summarize materials from a variety of sources.
6. Have pupils write headlines for the school paper.

OUTLINING

Outlining is just another way of organizing information. It is closely related to summarizing. When the reader owns the book, he sometimes outlines by underlining and by using letters and numbers to designate main and subordinate points.

The pupil should be taught to look for the organization early in the primary grades. In his earliest picture reading he learns to follow a sequence of events. In his first stories he learns to identify the main idea. Gradually, he will learn to put the story with its main idea and its supporting details into a simple outline. The outline should identify the major idea and show the relation of supporting details in a logical, sequential order.

Outlining is not easy. Many speakers and writers do not have a clear-cut outline. Others, because not all pupils immediately grasp what is said, repeat or elaborate at great length. This may tend to make their presentation seem unorganized. As the pupil attempts to outline such a presentation, he needs to ignore the unimportant details. He must select the essentials from the unessentials.

Once the pupil understands the organization, he is ready to put this organization into an outline form. He starts by listing the major points. Points of lesser importance and that support the main ideas are indented. Indentation gives clues to the organization.

Sometimes the pupil may want both to indent and to letter and number the headings. Roman numerals represent major headings; headings of next-highest significance or second-order headings are indented and prefaced by capital letters; headings or points that support second-order headings, hence third-order headings, are preceded by Arabic numerals; finally, fourth-order points are preceded by lower case letters.

The pupil may use a topic approach or a sentence (or question) ap-

* *Basic Reading Skills for Junior High School Use* (Chicago: Scott, Foresman & Company, 1957), p. 161. Reprinted by permission. Other similar exercises will be found on pages 160-161 of this source.

proach in outlining. Thus, the first major point may simply be "A definition of photosynthesis." Or, it may be put into a complete sentence such as, "What is the definition of photosyntheses?" Either technique is satisfactory.

The outline, like any other summarization, has certain limitations. It does not contain the original material. It cannot contain everything that was said or written. But, in the beginning at least, it may be better for the pupil to write too much rather than not enough. An outline that is too skimpy is not very useful. It must contain enough material so that the pupil will see the relationships between the facts, ideas, or statements made. The perceiving of relationships is true organization.

Teaching the pupil to outline may be done in many ways:

1. Have pupils organize a series of objects into specific categories.
2. Have pupils select the two or three main ideas in a series of paragraphs.
3. Have them group details about each of several main ideas.
4. Teach outline form.
5. Have pupils check their outlines against teacher-prepared outlines over the same material.
6. Have pupils fill in the details in an outline for which they have been given the major ideas.

I.

A.

B.

II.

A.

B.

This exercise may be simplified by giving the pupils the four statements that should be used to complete the paragraph, but requiring them to put them in the proper order.

UNDERLINING

Another form of organizing information is underlining. Many pupils use underlining of key words and phrases in a book to organize what they have read. Unfortunately, the technique used is frequently not good. The pupil reads and underlines words and phrases in a hit-and-miss fashion. He finds out too late that his underlining was not planned. In short, it does not show the organization of what was read. When the pupil returns to the underlining later, he finds that he no longer can decipher the reasons for underlining. Underlining thus may become a poor

substitute for the thinking and organizing that accompanies good reading. Proper underlining requires the pupil:

1. To survey the chapter.
2. To read the chapter.
3. To mentally familiarize himself with the organization of the chapter.
4. To underline main ideas and supporting details after having read each paragraph.
5. To underline only those words and phrases that actually indicate the organization of the paragraph.

Commonly, the pupil should underline the topic sentence. This sentence gives him the main idea of the paragraph. Frequently, he may want to underline only a key word or phrase in the topic sentence. The good reader, using a skimming technique, learns to know the major content of a book simply by detecting the topic sentences and then associating them with one another.

Proper underlining also means that the pupil must underline the key subtopics or supporting ideas. This includes key words or key phrases.

A useful technique is to number the subpoints or facts that support the main idea. The pupil's memory for these facts will be improved and in review they will stand out more forcibly if he numbers them.

When underlining, the pupil should have a code of symbols that he can use consistently. Thus, the topic sentence may have two lines under it; the supporting details have only one line under the key words.

Pupils frequently use a vertical bar in the margin to indicate an area of importance. An S in the margin may indicate that at that point the writer has summarized what he has said. A question mark in the margin indicates that here is a section that the learner doesn't understand. A circle frequently is used to indicate new and technical words used in the paragraph.

Some writers disparage underlining. However, one might ask: Why spend time taking notes on something that one can have in its entirety? Underlining prevents the learner from taking too few notes. It also permits him, during review, to again read the entire paragraph if, in the meantime, he has lost the trend of thought.

Tape number thirteen in the *Listen and Read Series* (pp. 68-74; p. 68)^{1, 2} is devoted to the teaching of underlining. The teacher may adapt the techniques suggested there to the elementary pupil.

NOTE MAKING

Effective note making is a high-level study or integrative reading skill. It requires attention, concentration, skillful reading and listening, and the putting into practice of one's organizing abilities.

The making of good notes whether in reading or in listening requires the pupil to learn to write notes and to pay attention at the same time. The making of notes is certainly more than a secretarial job. Digestion and learning should be taking place. However, all notes do not need to be in the pupil's own words. Usually there is nothing wrong with the teacher's words, if the pupil understands them. Comprehension is the prime consideration. The pupil should learn to listen and read for meaning rather than for mere words.

The pupil needs to be taught to focus on the main idea and on those points that support the main idea. The pupil's notes should be a clue to the organization of the original material.

There are three basic forms of note-making:

- (1) *The Paragraph*—This is probably most easily developed, but frequently is not the best organized. Each paragraph represents a new idea.
- (2) *The Sentence*—This is better than the paragraph form in that it attempts to organize the material by stating a series of sentences. It thus also may be easier to use in review.
- (3) *The Outline*—This provides the best opportunity for organization.

Obviously, the best notes seem to be written in outline form. Charts, diagrams, and illustrations should be included in the outline. The writer or speaker frequently summarizes in a simple drawing hours of lecture or written material. Charts frequently show the organization of an entire discussion.

The pupil should learn to read for the topic sentence. This gives the main idea. He also must read for the supporting details, for the speaker's organization, and for transitional words that give clues to the entire paragraph or chapter.

Such cue words or phrases as "*The main point is,*" "*There are three major ideas represented here,*" "*I will discuss three major issues,*" or "*The uses of lye are*" indicate that the writer is about to present major ideas.

Words like *besides, furthermore, moreover, likewise, and in addition* indicate that a supporting idea is about to be introduced. Words like *first, in the first place, or second* indicate that a number of subpoints will be introduced. The word *finally* indicates that the writer has come to the end. Words like *consequently, therefore, hence, thus, thereupon, or accordingly* indicate that the point now being made flows from previous statements. Words like *finally* or *in conclusion* indicate that a summary is about to be made.

Words like *but, however, whereas, nevertheless, notwithstanding, on the contrary, or yet* indicate that a contradictory statement or point of view is about to be introduced.

It is not uncommon to find a conscientious pupil failing to get significant results from note making. Perhaps the notes themselves are adequate, but the pupil has not taken the pains to organize them. He has written them on any piece of paper available. Unfortunately, when the time comes for review, he no longer can locate the odd bits of paper or, if he can find them, he no longer knows what comes first and what comes next.

Some pupils may be too wordy. Simplicity is the key to good note making. Thoroughness, however, should not be ignored. The pupil must learn to take enough notes, so that, if after the lecture he spends a few moments on them, he can organize them into a representation of the lecture or of his reading. This is impossible when he takes notes only over those elements that he does not understand.*

Finally, notes must be reworked. They should not be rewritten, but as soon as possible they should be revised. The more recently the pupil has written them, the better will be his memory for the content that they contain and the more easily will he be able to organize them. Notes do not change physically, but unless the pupil rereads them and reworks them immediately, he will lose much information. It is the pupil who loses that "something" required to make notes meaningful.

In summary, let us suggest a few guidelines for effective note-making. The pupil should learn to:

1. Use a standard $8\frac{1}{2} \times 11$ " notebook.
2. Use a loose-leaf notebook, not clipboards, small pads, or ordinary writing tablets.
3. Divide his paper into two sections: the right side of the page to be used for actual note taking, the left margin for personal comments. Below the notes and personal comments may be written the summary.
4. Number each page, entitle notes, and begin each new topic on a new page.
5. Keep notes from different classes in separate notebooks or separate them with dividers or tabs.
6. Take notes in ink.
7. Use only one side of the page.
8. Make notes brief and to the point.
9. Use quotation marks whenever the writer's or the speaker's words are quoted.
10. Copy definitions, formulas, and statistics exactly. They usually cannot be shortened.

* A recent study¹⁰ found that making notes after the lecture was just as effective as making them during the lecture. Perhaps, if pupils were trained to delay note-making, retention would generally improve. Notes are only an aid to learning, not learning.

11. Move on if a point is missed. Allow room to add it later.
12. Combine notes on the same topic.
13. Make notes of those items that are emphasized, frequently repeated, on which there will be an examination, and that are written on the blackboard.
14. Make a table of contents for the notebook.
15. Organize notes, indenting supporting points and subtopics.

READING FOR EVALUATION (CRITICAL READING)

The pupil must constantly read to evaluate. The good comprehender is a critical reader. He checks the truth, logic, reliability, and accuracy of what is written. He looks for contradictory material. He relates the material to his experience. He distinguishes fact from fiction, is concerned with the timeliness of the material, and tries to understand the author's motives.

The critical reader is as much interested in why something is said as in what is said. He is sensitive to how words are used and is slightly suspicious of the author's biases. He pays particular attention to words with several meanings. He checks copyright data, the author's reputation, and the publisher's past performances. He looks for errors of reasoning, of analogy, of over generalization, of over simplification, and of distortion. He looks for one-sided presentations, prejudices, biases, faulty inferences, and propaganda. He avoids jumping to quick conclusions.

The teacher must lessen the difficulties of critical reading. A knowledge of critical reading is not enough for its application. The child needs training and guidance. To read critically the pupil must establish certain criteria. Without these criteria he cannot decide what is desirable and what is undesirable.

Pupils need to be taught how to distinguish between inferences and conclusions that have validity and those that are not based on the data or on the wrong data. A simple exercise is to stop the pupil before he comes to the writer's conclusion and let him state all the possible solutions.

Huelsmann¹³ mentions three ways of teaching critical reading: the direct approach, the incidental approach, and the functional approach. Kottmeyer¹⁵ experimented with a direct approach. Newspapers, magazines, editorials, and cartoons were read critically. Pupils were given definitions of propaganda techniques and sought to discover their presence in the materials read. The functional approach is one in which class materials are taught with the definite purpose of promoting critical skills. The least effective is an incidental approach. It refers to the training in

critical reading that may come as a mere by-product of social studies learning.

The critical reader reads all materials in a questioning way. He constantly asks: Why? He is constantly concerned lest the writer's prejudices, biases, or assumptions may be coloring his presentation and consequently lead to an acceptance of a wrong point of view.

The critical reader reads beyond the materials. He is not satisfied with the simple statements. He uses his previous experiences and previous learning to understand fully what he is reading.

The critical reader thinks with the writer. He formulates the question clearly, checks the authenticity of the materials, evaluates the author's credentials, looks for errors in reasoning, and develops a sensitivity to the rightness or wrongness of what is presented.

The critical reader suspends judgment until the writer has finished his argument. As he proceeds with the material he asks himself: Is the author consistent? Is he logical? Are his motives noble? Are his facts true? Are his conclusions correct?

Critical reading is slow, sentence by sentence, and thought by thought reading. It requires the reader to analyze carefully the writer's words, his purpose, and his implications.

Let us look at these:

Words: Many words can be used by writers to arouse unfavorable feelings toward a person or an idea. For example, the words fascist, communist, or socialist usually arouse antagonism and distrust. In some circles to be labelled a Negro, Jew, or Catholic may leave similar impressions. The words, conservative, capitalist, warmonger, isolationist, progressive educator, selfish, conformist, world-minded, idealist, overzealous, and liberal, similarly mean many things to many people.

Purpose: What is the writer's purpose? Does he wish to inform or to entertain, to teach or to move emotionally? Is his motive open or hidden? The reader should constantly ask: Who would benefit if I agreed with the speaker or writer? What kind of evidence does he bring forth?

Implications: It is obvious that the reader must prepare himself so that he can detect generalities, fallacious reasoning, and unwarranted clichés. As citizens, as members of a church, as buyers of somebody's products, or as pupils in a classroom individuals are constantly subject to writings that attempt to make them think in a given way. They are asked to give allegiance to one thing and to turn against something else.

Some common techniques used by speakers and writers to sway public opinion are:

1. False or glittering generalization
2. Bias or prejudice

3. Unwarranted inference or cliché
4. Confusion of fact and opinion
5. Distortion of truth
6. Begging the question
7. False analogy
8. Error in inductive or deductive reasoning
9. Ignoring alternatives
10. Oversimplification
11. Changing the meaning of terms
12. Misleading headline
13. Failure to cite sources for one's information
14. Using prominent names to bolster one's point of view (testimonial)
15. Assuming that all relationships are causal
16. Use of bandwagon appeals
17. Use of questionable sampling
18. Appeal to emotion rather than to intellect
19. Relating only one side
20. *Argumentum ad hominem*—Getting the reader to accept a conclusion by ridiculing the opposition, by snobbing it, or by ridiculing the person who holds the argument rather than by attacking the argument. Name-calling is a common such technique.
21. Use of straw men, straw issues, outright lies, digs, and snide remarks.
22. Transfer techniques (I'm Jimmy Jackson, I drink Mayberry.)

The pupil early in life needs to learn to interpret what he reads. The teacher may develop the critical reading skill with exercises similar to the following:

1. Teach pupils to discriminate between factual news reporting and editorial writing.
2. Have pupils identify the types of writing that are more likely to state the facts, that indulge in the bantering about of personal opinion or that specialize in propaganda.
3. Have pupils select from three or four stated purposes the one that best represents the writer's purpose.
4. Have pupils select from a list of words those that tend to arouse the emotions of the reader.
5. Have pupils match given propaganda techniques with statements such as the following:

Propaganda Techniques

- a. Citation of an authority or a testimonial
- b. Bandwagon or everybody is doing it technique
- c. Glittering generality

- d. Transfer technique (similar to testimonial, but the person doesn't say anything directly associated with what is being advocated or recommended).
- e. Name calling.

Statements

- 1. Mr. Bott says there is no need to fear snakes.
- 2. Everybody is going to Lakewood Park on Sunday afternoon.
- 3. Grand Park is the finest park in central Missouri.
- 4. Don't be a wall flower.
- 5. A and B tastes best. Everybody drinks A and B.
- 6. We have the finest and the world's largest industrial facilities.
- 7. When you wear a hat you are more of a man and people hire men.
- 8. There's nothing like wood to add to the decor of your home.
- 9. The best music comes from a Cunningham radio.
- 10. People who know drink their beer out of a glass.
- 11. Theresa Pond, movie star, uses Market soap.
- 12. You will look better in a Manor shirt.
- 13. Fifty million people carry Blue-White Insurance.*

READING FOR LEARNING

Complete reading is said to involve four steps: recognition, understanding, reaction, and integration. Ultimately, it is hoped that the reading a child does will influence and direct some future activity. In a very real sense, then, whenever the child integrates what he is reading, he is studying. This may be the ultimate in comprehension. Gray¹¹ points out that integration is "the heart of the learning act in reading."

Here we are concerned primarily with a method of integrative reading. Such a method is that proposed by Robinson (pp. 13-14).²⁰ It involves five steps: survey, question, read, recite, and review (SQRRR).

SURVEY

Surveying is the process of becoming familiar with the broad outlines, the chapter title, the main headings, the topic sentences, and the summary.

The good student gets an over-all picture of what he is reading or studying. The reason is obvious. The driver consults a road map before venturing on a trip. The race driver drives the course many times before the actual race. The diner surveys a menu. In rapid fashion he notices the dinners, sandwiches, appetizers, and drinks, and, the prices do not escape

* This exercise is effective only if the pupils have been taught the various propaganda techniques.

him. The baseball player checks the infield for chuck holes, and the general surveys the terrain before initiating his attack. Each of these persons wants to know what lies ahead so he may proceed with the proper technique. The pupil must know what type of article he is reading before he can choose his techniques well.

In surveying a book, the *title* tells in general what the book is about; the *preface* gives a more detailed statement. In it the writer tells why he wrote the book and what he seeks to accomplish.

The *table of contents* gives a more detailed outline of the book. It gives clues to the writer's organization.

The chapter *titles*, *headings*, and *summaries* should come next. The headings are especially important. They are the cues to the chapter organization. In general, the chapter title tells the main idea. The major headings give the broad outlines of the chapter and show how the writer supports the main idea. Under each major heading may be one or more side headings.

The *topic sentence* in each paragraph is especially important. It summarizes the paragraph. It contains the main idea of the paragraph and usually is the first sentence in a paragraph. However, sometimes it occurs at the end of the paragraph, in the middle of the paragraph, or simply may not be stated.

Surveying thus allows the reader to "warm-up" to the reading task ahead. It gives an over-all view of the material.

Elementary teachers have always prepared the pupil for the reading task. They have made certain that the child had the necessary experience for understanding and that he had a purpose for reading. This is what surveying accomplishes for the more mature pupil.

Skimming frequently is used in previewing. Skimming gives a quick glimpse at the organization. It is a sort of threshing process in which the wheat is separated from the chaff. The reader is after certain information or perhaps wishes to decide whether or not to read the selection more intensively.

QUESTION

The second step in integrative reading is the question. Sometimes the writer poses questions at the beginning or at the end of the chapter. The teacher may suggest questions as a part of the assignment. The pupil should become able to make his own questions. In doing this, he may turn the main headings or italicized words into questions. The teacher has many questions at his disposal. His questions may call for memorization, evaluation, recall, recognition, comparison, summarization, discussion, analysis, decision making, outlining, illustration, refutation, and inductive or deductive thinking (p. 253).¹²

A pupil should readily see the value of this process. Formulating questions encourages the reader to seek answers as he reads. Many writers suggest that pupils write down these questions as a basis for review. Additional questions may be added during the actual reading.

Here are a few suggestions about asking questions:

1. The pupil should ask questions *before* he reads rather than *after* reading. He must turn the chapter title, the headings, unfamiliar terms, etc., into questions.
2. He should ask questions during reading.
3. He should try to answer his question before actually beginning reading.

READ

The third phase of an effective study procedure is *purposeful reading*. Let us examine some of the objectives of purposeful reading.

The reader should:

1. Have a definite reason for his reading;
2. Define clearly the problem that he wishes to solve;
3. Focus his attention on the main points;
4. Try to group the supporting details with the main idea;
5. Keep in mind the nature of the assignment;
6. Pay special attention to illustrations of all kinds. graphs, maps, charts;
7. Be a flexible reader, adjusting his rate to the purpose of the reading and the nature of the material; and
8. Try to remember that he is seeking to answer questions.

Study-type reading frequently is intensive reading. It is careful, rather slow reading with emphasis upon remembering details (p. 29).²⁷ Intensive reading requires that upon reaching the end of the chapter the reader recognizes the main idea. He should know where the author was heading and how he got there. He tends to form an outline of what he has read. He sees the major and supporting points.

RECITE

The fourth phase of Robinson's SQRRR study method is literally a self-examination. Here the pupil attempts to answer the questions that he has posed without referring to his notes or other aids. Only when he fails should he consult his notes or refer to the book. One study method has been labelled a "self-recitation method" because of the great importance

of recitation in learning. Recitation directs our attention to specific questions, thereby aiding concentration. Concentration is a by-product of having a goal that challenges the person's whole mind.¹⁷

Self-recitation makes a number of contributions to effective learning. The pupil immediately is aware of how well he read, how accurately he accomplished his purposes, and whether he can express his new found knowledge in his own words. If he can verbalize his knowledge to his own satisfaction, generally he can also explain or recite to another. Recitation is the heart of effective study, it is the seeking of answers to self-imposed questions and of putting new learnings into one's own words.

REVIEW

The fifth and final phase of Robinson's method is review. Study is not complete until it includes a plan for retention. If learning is to be of any use in later situations, the child must remember what he has learned. Actually, remembering itself is defined in various ways. We say that one remembers data if he recalls them, can relearn them more quickly, recognizes them, can use them in test situations, or uses them to learn something else more easily. Perhaps the most important criterion of retention is the transfer that is made from the school situation to the life situation, to future acquisition of knowledge, and to future behavior.

Review becomes a relatively simple process if the reading has been done correctly. If the pupil developed an outline, wrote out questions for himself, developed the textbook into an outline, or made a summary, he may use any one of these as the basis for a good review.

Review, whether through notes or through rereading, should be an exercise in critical reading and thinking. Basically there are two methods of review: symbolical review and review by reimpression. Reimpression is the type of review that occurs when the person rereads. Symbolical review is done through recall, self-recitation, class discussions, tests, summaries, and lecture notes. This type of review encourages thinking, assimilation, integration, and organization. It is review with a purpose and with an eye on application

DEVELOPING STUDY SKILL

Educational Developmental Laboratories supplies a study skills library designed to help the pupil to develop the essential study skills and to improve his reading in the content areas. The program is planned as a sequential twelve-year program. It emphasizes reading in science and social studies and provides training in reference skills. At present materials

are available for grades four through nine. A similar program is offered by Science Research Associates. Both are described in Chapter 14.

LOCATION SKILLS

The good pupil is one who has learned "to find the facts." He knows how to locate information. This means a familiarity with library aids, with library resources, the Dewey Classification system and card catalog, the various indices, encyclopedias, and almanacs, but it also means the ability to find the desired material within a book, a chapter, a paragraph, or a sentence. It means that he knows how to use a table of contents, an appendix, and the footnotes.

At the primary level location skills begin with the learning of the alphabetical sequence. The pupil needs to know which letters precede and follow a given letter. He needs to learn that indices and dictionaries are based on an alphabetical order. He must become familiar with the guide words (usually in the upper left-hand and upper right-hand corner) used in dictionaries to indicate the first and last entry words on a given page.

Although reference materials and their use are discussed later, at the primary level the pupil should have experience with the following materials:

1. Picture dictionaries
2. Picture and regular encyclopedias such as *Compton's Pictured Encyclopedia*, *The World Book Encyclopedia*, or *Junior Britannica*.
3. Glossaries.

Exercises useful in developing dictionary, encyclopedia, and alphabetizing skills at this level are:

1. Ask the pupil to supply a missing letter in a series of alphabetized letters.
2. Have the pupil arrange letters or words in an alphabetical order.
3. Ask the pupil to supply the preceding and following letter. Thus:

J . . . k . . . L . . .	. . . o . . .
. . . b . . .	. . . p . . .
. . . x . . .	. . . d . . .
. . . s . . .	. . . f . . .

4. Let the pupil arrange a series of last names in alphabetical order.
5. Have the pupil locate the pages on which an encyclopedia treats given content matter. "On what page would you find something about George Washington?" "Find a description of an elephant." "In what volume(s) and on what page or pages is atomic energy discussed?"
6. Teach the pupil how to use the volume designation on the back of

encyclopedias to locate quickly the subject matter for which he is looking.

7. Teach the meaning and use of guide words and cross references in encyclopedias.

At the intermediate level especially the pupil must be able to locate materials needed in the preparation of his assignments. There is a high degree of relationship between a pupil's ability to locate and use reference materials and the grades that he gets in school.

KNOWING A BOOK

Effective study requires some skill with a book. The pupil must know the title, the copyright date, the author's name, and perhaps the author's professional status.

The preface is an indication of the plan of the book. The table of contents is an outline of the book. It indicates the main divisions. The introduction, the summaries at the end of each chapter, and the final summary at the end of the book give a quick glimpse at the nature of the book. The glossary, if one is provided, gives the special meanings of certain words.

The index is more detailed than the table of contents and gives a detailed look at what the book contains. It is a directory to the book. It tells in minutest detail what is contained in the book. The index has certain characteristics that the pupil should know:

- (1) The index is arranged alphabetically.
- (2) The paging system needs to be carefully studied:
 - a. 400-405 indicates that a certain topic extends from page 400 to page 405.
 - b. 400, 406 indicates that the topic is discussed on page 400 and on page 406.
 - c. 400f indicates that the topic is discussed on page 400 and the following page.
 - d. 400ff indicates that the topic is discussed on page 400 and the following pages.

Exercises such as the following teach the pupil what to look for in the various parts of a book:

- | | |
|----------------------------|--|
| a. index | 1. introduction or plan of the book. |
| b. table of contents | 2. an outline of the book, listing the chapter headings in sequence. |
| c. glossary | 3. a list of words with meanings. |
| d. preface | 4. an alphabetical listing at the end of the book of the topics covered in the book. |

LIBRARY SOURCES

Sometimes, the textbook does not contain the information that the pupil needs. In such instances he must refer to other sources. Most of these will be in the library.

The pupil needs to familiarize himself with the card catalogue. Books commonly are sorted into groups by using the Dewey Decimal system. Figure 13-2 describes the complete system.

Figure 13-2.

The Dewey Decimal Classification System

000-099	General Works, Encyclopedias,
100-199	Philosophy, Psychology, Ethics,
200-299	Religion, Mythology,
300-399	Sociology and Economics, Education, Government, Political Science, Law,
400-499	Philology, Language,
500-599	Science, Mathematics, Physics, Astronomy,
600-699	Medicine, Engineering, Agriculture, Domestic Science, Business,
700-799	Fine Arts, Recreation
800-899	Literature
900-999	History

Each of these ten divisions is divided somewhat like the following:

900-999	History
910	Geography, Travel
920	Biography
930	Ancient History
940	Modern European History
950	Modern Asian History
960	African History
970	North American History
980	South American History

Thus, books in philosophy fall into the 100 series. One such book, *The Development of the Perceptual World*, by Solley and Murphy, may be classified as 152.7. It also has another number. This may be S688d. This number designates the author. And under this number usually is given the date of publication which in this case is 1960.

Thus the full call number for the book is

152.7
S688d
1960

The card catalogue lists all books in three ways: (1) a *subject* card, which in the previous case is perception; (2) an *author* card, which is Solley; and (3) a *title* card. Thus a card for the book would be found under development. The articles, *the*, *a*, and *an* are never considered to be a part of the title.

The card catalogue also contains *cross reference cards*. These cards usually are of two types. There may be a card which contains a heading labelled *words*. Underneath this will be the words *see vocabulary*. This means that to find anything about words the pupil should look under vocabulary. Sometimes, the words will be: *see also*. This indicates that some books will be found both under *words* and under *vocabulary*.

If the pupil is going to get the most out of the library, he also must become familiar with dictionaries, encyclopedias, indices, biographical references, atlases, almanacs, anthologies, biographies, the United States Catalogue, and numerous other reference materials. A list of the most common reference materials includes the following:

1. *United States Catalogue*
2. *Dictionary of American Biography*
3. *Dictionary of National Biography*
4. *Who's Who in America*
5. *World Almanac*
6. *Reader's Guide to Periodical Literature*
7. *The International Index to Periodicals*
8. *The New York Times Index*
9. *Poole's Index to Periodical Literature*
10. *Book Review Digest*
11. *Education Index*
12. *Information Please*
13. *National Geographic Magazine*
14. *Roget's Thesaurus*
15. *Catholic Periodical Index*
16. *Who's Who In American Education*
17. *Who's Who*
18. *A Guide to Colleges, Universities, and Professional Schools in the United States*
19. *Roberts Rules of Order*
20. *Sturgis' Standard Code of Parliamentary Procedure*
21. *Junior Book of Authors*
22. *Goode's School Atlas*
23. *Subject Index to Poetry*
24. *Dictionaries*
25. *Road Maps*
26. *Newspapers*
27. *Atlases*
28. *Encyclopedias*
29. *Books of Quotations*
30. *History Books*
31. *Anthologies*

The pupil needs also to be taught how to find articles. Where should he go to find the information? The following guidelines should be helpful:

- (A) If he is interested in an article in a periodical, the following references are important:
 1. *Reader's Guide to Periodical Literature*
 2. *The International Index to Periodicals*
 3. *The Education Index*
- (B) If he is interested in a book, he should consult the following:
 1. The Library Catalogue
 2. The *United States Catalogue of Books*
- (C) If he is interested in a newspaper article, he should consult:
 1. *The New York Times Index*
- (D) If he is interested in statistical and general factual materials, he should consult:
 1. *The World Almanac*
 2. *The United States Census*
 3. *Who's Who in America*

An exercise similar to the following is useful in teaching location skills:

Directions: Where would you find the following? See how many you can find. Some you may locate in more than one source.

- | | |
|---|----------|
| 1. The pronunciation, use, spelling, and meaning of logistics | 1. |
| 2. Today's price of watermelons | 2. |
| 3. A map of the United States | 3. |
| 4. A discussion of evolution | 4. |
| 5. Who wrote: "Give me liberty or give me death"? | 5. |
| 6. A listing of American Universities | 6. |
| 7. The causes of World War II | 7. |
| 8. Synonyms for the word <i>run</i> | 8. |
| 9. Articles from popular magazines such as <i>Time</i> or <i>Life</i> | 9. |
| 10. Interesting places to visit | 10. |
| 11. Who is Dean A. Worcester? | 11. |
| 12. What is the monetary unit in Japan? | 12. |
| 13. Qualifications for voting in the fifty states | 13. |
| 14. Japanese Peace Treaty, formally ending the war on March 20, 1952 | 14. |
| 15. Who is Willy Brandt? | 15. |
| 16. Who is Peter Abelard? | 16. |
| 17. What is the meaning of <i>de facto</i> ? | 17. |
| 18. What is the enrollment of Brigham Young University? | 18. |

Reading Maps, Charts, and Graphs

Sometimes, the writer cannot put into words accurately what he wants to say. Writers thus frequently use pictures, illustrations, maps, charts, graphs, and diagrams to explain more fully than is possible through words. Unfortunately, the pupil gets from these materials what is intended only if he can read the new symbols that the writer incorporates into these illustrations. He needs to learn to read the terms, colors, and other symbols that occur on the illustrations.

Let us first look at map reading.

READING MAPS

Map reading requires numerous skills. The pupil needs to identify natural features such as rivers and lakes; land shapes such as continents and islands; and man-made features such as railroads and highways. He needs to know the meanings of gulf, bay, earth, distance, scale, latitude, longitude, sphere, hemisphere, pole, and equator. He needs to be able to read map symbols.

He needs to read physical and political maps of the United States, of North America, and the World. He needs to read maps depicting crops, rainfall, population, vegetation, wind belts, and ocean routes. He must learn to read maps of cities. And he should be able to read topographic and polar maps.

At the earliest level the pupil will learn simple concepts of direction (north, south, east, west), of distance, and of scale. He next advances to a recognition of large land and water forms on the globe and he may learn to identify water, land, forests, and mountains by their color designation. Gradually, his learning becomes more specific. He will learn to locate continents, seas, oceans, and countries on a map.

In the upper elementary grades the pupil usually learns to use map symbols, scales, and legends. He learns to find and use the equator, longitude, and latitude, and he can understand the causes of night and day and of the seasons. He translates latitude into miles and longitude into time. He becomes familiar with the poles, the arctic and antarctic circles, the Tropic of Capricorn and the Tropic of Cancer. He understands meridians and parallels. He develops further skill in location, in direction (upstream, downstream, etc.), in identifying natural features (continents, countries, islands, peninsulas, oceans, rivers, lakes, gulfs, mountains, plains, deserts, etc.), and in identifying cultural features (cities, capitals, railroads, industries, crops).

He learns that in the tropics it is warm all year; that between the tropics and the arctic-antarctic circles the temperature varies from season to season; that near the poles it is cold all year.

Teaching the pupil to read maps includes the following steps:

- (1) Studying the title of the map
- (2) Studying each symbol (the legend)
- (3) Noting direction on the map
- (4) Analyzing and applying the map scale
- (5) Relating the area under study to a more general or larger area (Kansas in relation to the United States).

The following exercises are helpful in teaching map skills:

1. Relate map study to pictures and aerial photographs.
2. Teach direction in the class room; teach the meaning of up and down; demonstrate that at noon shadows are to the north.
3. Demonstrate how a small map or globe represents a large territory.
4. Make a map of the child's home town or of his immediate environment (school building, school grounds).
5. Let pupils answer true or false statements such as the following:
 - a. My home is north of the post office.
 - b. East of our school is the public library.
6. Have children locate their city on a map.
7. Have children trace the route of boats moving upstream.
8. Teach that shading from green through yellow, brown, and red indicates an increase in altitude.
9. Require pupils to find answers for questions such as the following:
 - a. How many continents are there?
 - b. How do you know that the earth is round?
 - c. What route did Balboa take?
 - d. What changes have occurred in the map of Europe as a result of World War II?
 - e. What time is it in Tokyo and London when it is 6 p.m. in New York?
10. Require the pupil to locate on the map an example of each of the following:

archipelago	coast line	highland	ocean
basin	continent	inlet	peninsula
bay	delta	island	plateau
boundary	desert	isthmus	port
branch	dike	jungle	reef
canyon	divide	lake	river
cape	estuary	marsh	sea
channel	fiord	mesa	strait
city	gulf	mountain	swamp
cliff	harbor	oasis	tributary
			valley

A chart such as the following is useful in teaching the meaning of the terms:

swamp	desert
dam	canal
tunnel	bridge
navigation	railroad
large cities of	boundaries
varying sizes	

12. Teach the representation of elevation and slope through contour lines.

13. Study the meanings of terms such as:

apogee	isobar	altitude
contour line	isotherm	longitude
divide	meridian	parallel
equinox	perigee	meridian
international date line	satellite	Mercator's projections

14. Require pupil to answer questions based on maps. For example:

1. In Africa, the rainfall around the equator is generally heavier than either north or south of the equator.

-a. true
-b. false

2. North of the equator there is very little vegetation.

-a. true
-b. false

3. Farming is most common near the equator.

-a. true
-b. false

4. What is the approximate distance from the northern to the southern tip?

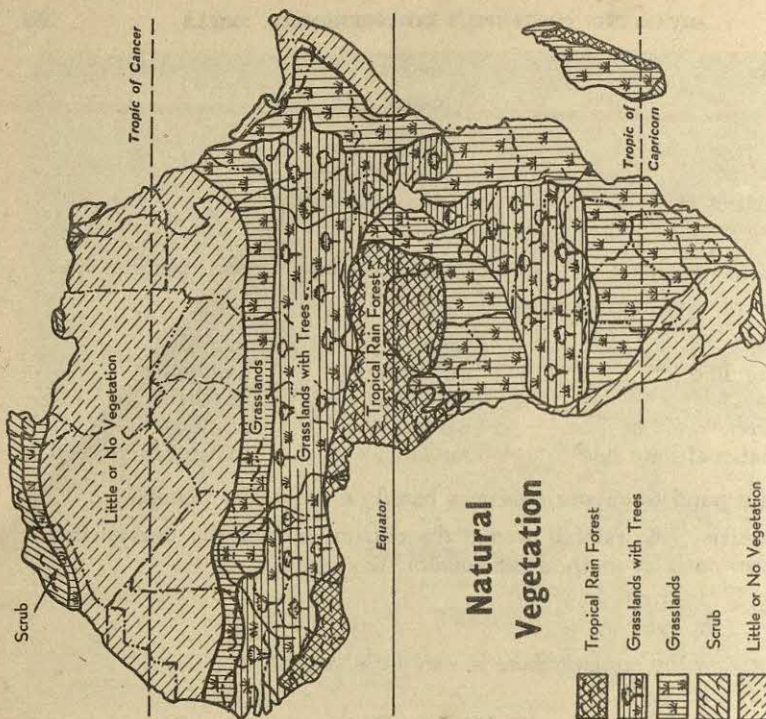
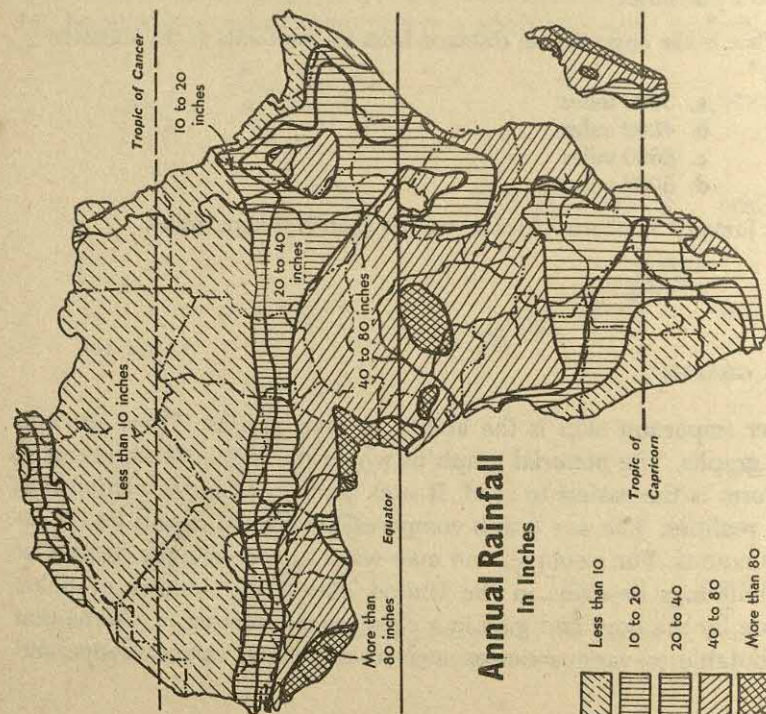
-a. 3000 miles
-b. 4000 miles
-c. 6000 miles
-d. 5000 miles

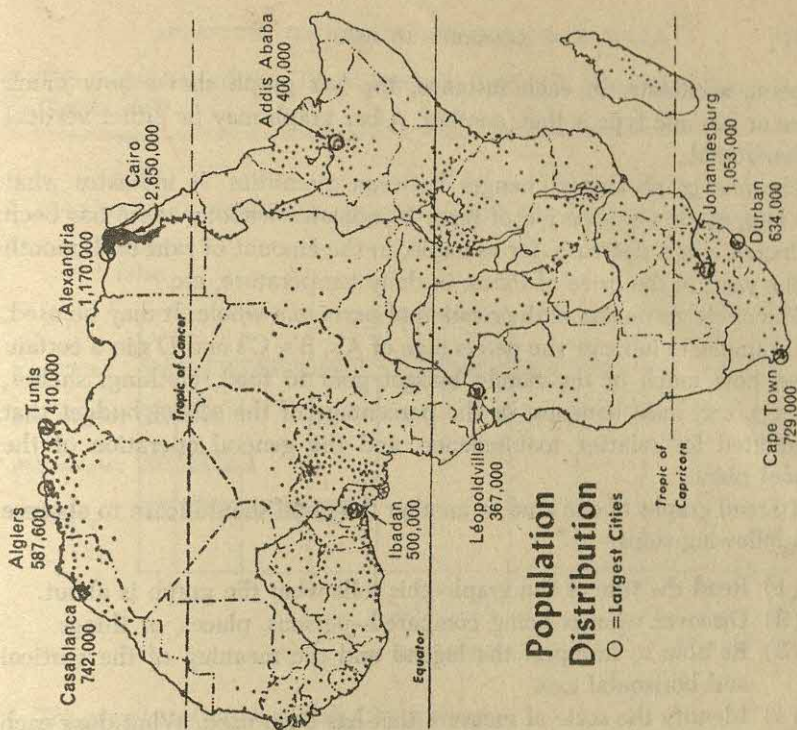
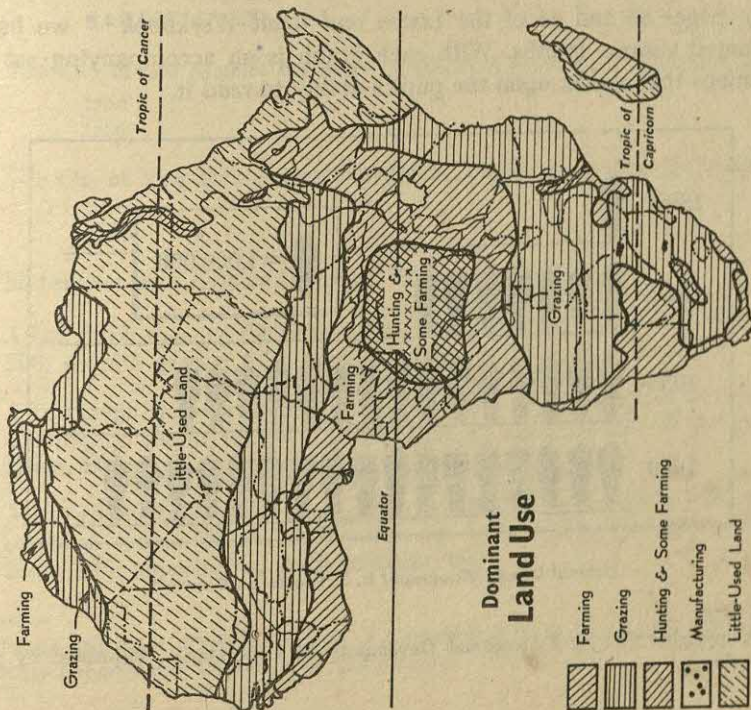
5. In January Southern Africa is warmer than Northern Africa.

-a. true
-b. false

READING GRAPHS

Another important skill is the ability to read graphs. There are four kinds of graphs. The *pictorial* graph in which the units are expressed in picture form is the easiest to read. It uses pictures to show relationships between realities. The *bar* graph compares the size of quantities. It expresses amounts. For example, one may want to compare the heights of various buildings or dams in the United States; the number of ticket sales made by the boys and girls in a class; or the number of deaths that are attributable to various causes such as drowning, car accidents, and





The maps here and on page 388 are from "The Follett New Unified Social Studies Program Bulletin," Follett Publishing Company. Originally in *Exploring the Old World*, © 1957 by O. Stuart Hamer, Orlando W. Stephenson, Ralph S. Yohe, Ben F. Ahlschwede, Dwight W. Follett, and Herbert H. Gross. Reproduced by permission.

airplane accidents. In each instance, the bar graph shows how much more or less one type is than another. A bar graph may be either vertical or horizontal.

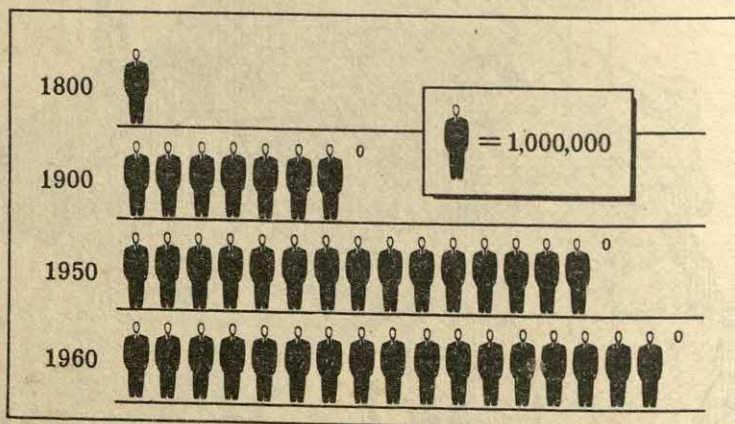
The *line* graph shows changes between quantities. It indicates what has happened over a period of time. It indicates whether there has been an increase or a decrease, for example, in the amount of rain each month of the year, in the price of foods, in daily temperature, etc.

The *circle* graph shows the relation of parts to a whole. It may be used, for example, to indicate the percentage of A's, B's, C's and D's in a certain class; how much of the family budget goes to food, clothing, shelter, savings, car, miscellaneous; or the percentage of the school budget that is allotted for salaries, maintenance, and the general operation of the school plant.

To read graphs of one kind or another the pupil should learn to observe the following steps:

- (1) Read the title of the graph—this tells what the graph is about.
- (2) Discover what is being compared—persons, places, or things.
- (3) Be able to interpret the legend and the meaning of the vertical and horizontal axis.
- (4) Identify the scale of measure that has been used. What does each figure represent?
- (5) Discover what conclusions can be drawn from the graph.

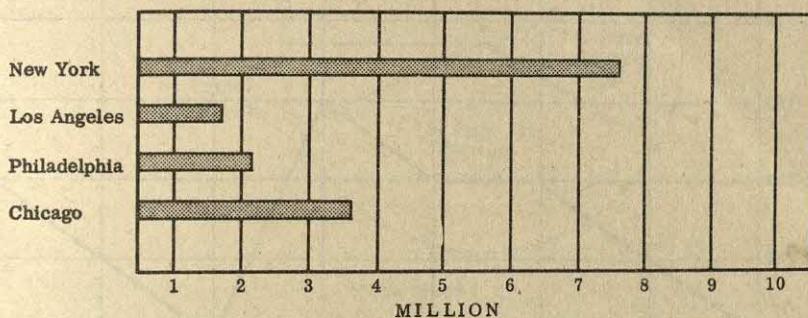
On pages 83 and 84 of the *Listen and Read Workbook*^{2*} we have presented various graphs. With each graph is an accompanying set of questions that checks upon the pupil's ability to *read* it.



Pictorial Graph (Pictograph) U. S. Population Growth *

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1. The population of the United States in 1900 was more than seven times that in 1800.
 true
 false
2. Between 1950 and 1960 the population grew approximately twenty million.
 true
 false



Bar Graph *

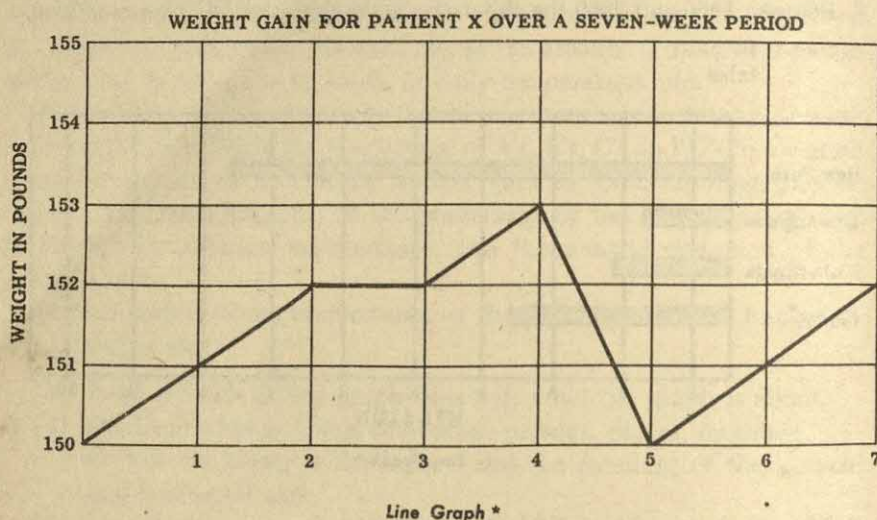
1. The population of New York City is about
 a. 8,000,000.
 b. 7,000,000.
 c. 800,000.
 d. 8,000,000,000.
2. The City of Los Angeles has more people than the City of Philadelphia.
 true
 false
3. The City of New York is more than twice as large as the City of Chicago.
 true
 false

The teacher may require the pupil to develop:

1. A bar graph showing the ticket sales of the following groups: 6th graders, 200; seventh graders, 350; eighth graders, 300; fourth graders, 220.
2. A bar graph showing the percentage of voters who turned out in various countries in recent elections: Austria, 95 per cent; Greece, 85 per cent; Korea, 80 per cent; United States, 60 per cent.
3. A bar graph showing the death rates per 100,000 occurring in 1950 as a result of various illness: Pneumonia, 31; tuberculosis, 22; cancer, 139; heart, 355; appendicitis, 2; all accidents, 60.

* *Listen and Read Workbook* (p. 83).² Copyright 1961 by Educational Developmental Laboratories. Reprinted by permission.

4. A bar graph showing the battle deaths in World War II for the following countries: Austria, 380,000; China, 1,325,000; Germany, 3,250,000; Japan, 1,270,000; Poland, 664,000; Rumania, 350,000; Russia, 6,115,000; England, 357,000; United States, 291,000.



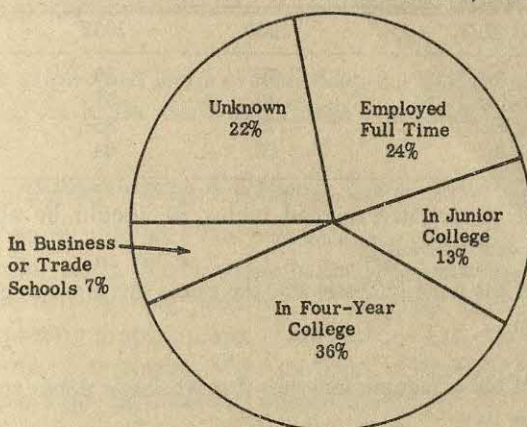
- Patient X weighed the least during the second week.
 true
 false
- Patient X weighed the most in the fourth week.
 true
 false
- Patient X weighed eleven pounds more at the end of the seven-week period.
 true
 false

Have the pupils draw line graphs for the following:

- A graph showing John's percentile scores on four weekly tests: week 1, 92; week 2, 85; week 3, 65; week 4, 98.
- A line graph showing the increase and decrease in battle deaths in various wars in which the United States was involved: Revolutionary War, 4,435; War of 1812, 2,260; Mexican War, 1,733; Civil War, 140,414; Spanish-American War, 385; World War I, 53,402; World War II, 291,557; Korean War, 33,629.

* *Listen and Read Workbook* (p. 84).² Copyright 1961 by Educational Developmental Laboratories. Reprinted by permission.

STATUS OF KANSAS HIGH SCHOOL GRADUATES, 1960*



Circle Graph *

1. How many of the high school graduates attend junior college?
2. What percentage of graduates attend business or trade schools?

Pupils may be required to draw circle graphs for the following:

1. A hotel spends 28¢ of each dollar for services and supplies; 19¢ for food; 37¢ for payroll; and 16¢ for maintenance and repair.
2. In 1957 the world population was 2,795 million. Of these, 225 million were in Africa; 189 million in North America; 192 million in Latin America; 1,556 million in Asia; 618 million in Europe and Asiatic Russia; and 15 million in Oceania.

Requiring the pupil to construct his own graphs is an effective teaching technique. The teacher should prepare for pupils a guide both for the development of graphs and for the interpretation of them.

READING TABLES

A table is a simple listing of facts and information. In reading a table the pupil should first look at the title. He then should look at the headings of the various columns with their major headings and subheadings, if there are any. Finally, he must read the details. These usually are written in the left-hand column. The table on page 394, from the *Listen and Read Workbook* (p. 85),² teaches all of these skills.

* *Listen and Read Workbook* ² Copyright 1961 by Educational Developmental Laboratories. Reprinted by permission.

Average Retail Prices of Foods in Cents, 1950, 1952 1954

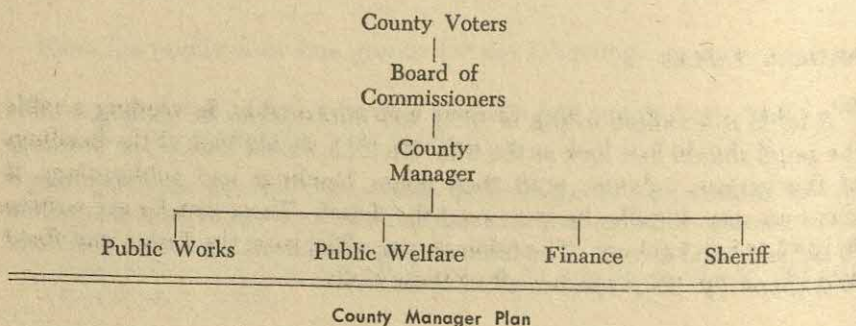
<i>Food and Unit</i>	<i>1950</i>	<i>1952</i>	<i>1954</i>
Coffee, 1 lb.	79	86	110
Sugar, 5 lbs.	48	51	52
Butter, 1 lb.	72	85	72
Bacon, 1 lb.	63	64	81

If the pupil has learned to read tables, he should be able to answer questions like the following: *

1. The title of the table indicates that the prices given are in cents.
..... true
..... false
2. The title of the paragraph indicates that wholesale prices are given.
..... true
..... false
3. The average price of butter in 1950 was 85 cents.
..... true
..... false
4. Only butter showed no increase in 1954 over 1952.
..... true
..... false
5. The lowest price per pound of any item listed is sugar.
..... true
..... false

READING CHARTS

Possibly the most common chart is the "flow chart." It shows the flow of organization. The pupil needs to be able to read it in social studies. Here is one such chart:



* *Read and Listen Workbook* (p. 85).² Copyright 1961 by Educational Developmental Laboratories. Reprinted by permission.

READING DIAGRAMS

Finally, the pupil must learn to read diagrams. An illustration of such a diagram is given in the *Read and Listen Workbook* (p. 86).² *

Comprehension in a Specific Content Area †

In the course of this and the previous chapters we have discussed numerous reading skills. We have emphasized the importance of grasping the main idea, of surveying materials, of choosing appropriate reading rates, of interpreting graphs, maps, charts, tables, and diagrams, of reading for a purpose, of organizing what one reads, of drawing inferences, and of retaining and applying what has been learned.

In the content areas, these and all other reading skills are needed for successful comprehension. In addition, in the content areas each of these reading skills must be applied to the specific content area in a particular way.

It is no longer possible to hold that all reading skills will transfer from one field to another. Reading is not a generalized ability that the pupil learns once and for all time. Rather, reading is a composite of many skills, each varying with the situation. For example, the vocabulary is usually specific to the area in which one is reading.

Early in the elementary years pupils are required to deal with a technical vocabulary.³² Common words take on a specialized meaning, for example, "the running brook" or "to address the chair." In this instance the pupil can pronounce the word, but may miss the meaning. Sometimes, both the meaning and the pronunciation elude the pupil.

Let us take a short look at some of the major content areas, and let us attempt to identify some of the factors that cause reading difficulties. The reader who wishes more extensive coverage of reading in the content areas might consult such books as *Effective Reading in Social Studies* and *Effective Reading in Science*, both by David L. Shepherd.

LITERATURE ‡

Reading literature requires special appreciation of the mood and style of the author. It requires interpretative reading and emotional involve-

* *Read and Listen Workbook* (p. 85).² Copyright 1961 by Educational Developmental Laboratories. Reprinted by permission.

† See Smith and Dechant, *Psychology in Teaching Reading* (pp. 353-376).²⁵

‡ See *Psychology in Teaching Reading* (367-372)²⁵ for an introduction to this section, and also Helene W. Hartley, "Teaching the Reading of Literature in the Elementary School," *Challenge and Experiment in Reading*, International Reading Association Conference Proceedings, 7 (1962), 43-45.

ment by the reader. The reader needs to read with his mind and with his emotions. He must find in literature splashes of the ever-flowing stream of human behavior and emotions.

Fiction is a biography of conflict in human motives (pp. 211-213).¹⁶ It traces the conflict from its inception to its conclusion. Since motives are "within" the person, the writer must "psychoanalyze" the individual, report what the person is saying to himself, use soliloquies or asides in which the person tells the audience what his motives are, or portray the person's motives through his appearance, speech, or action. The successful reader of literature must understand these literary contrivances of the author and read between the lines for a comprehension of the basic meaning.

Each literary form has its own mode of expression. In poetry the writer communicates through words and concepts and also through tone, mood, repetition, rhythm, and rhyme. In essays the mood may take on a formal, pedantic, humorous, satiric, philosophical, inspirational, persuasive, or political form (p. 370).²⁵ The short story presents its own literary contrivances. It is characterized by uniformity of tone and plot and by dramatic intensity.

To appreciate novels, short stories, poems, and plays the pupil must learn to analyze the elements of plot, characterization, style, and theme.

Plot. The pupil must learn to ask himself a series of questions. Did I like the ending? How would I have changed it? Did the writer use surprise, suspense, or mystery to keep me interested? What was the conflict or major motive of the story? What are the time and place settings? Is it fanciful or realistic literature?

An exercise similar to the following teaches the pupil to appreciate plot:

Read the following sentences and select the word that best characterizes the plot:

- A. We stood on the bridge not knowing whether to go forward, backward, or just remain where we were. In front of us and behind, the flood waters were rushing across the highway. Broken tree limbs, barrels, and household goods were floating by.

This series of sentences indicates that the plot is based upon:

- a. surprise
- b. suspense
- c. adventure
- e. intrigue

- B. How wonderful it would be if the world were really at peace. There wouldn't be this constant distrust among all of us. Men and women could intermingle freely with each other. They would be free from the fear of atomic destruction.

This series of sentences indicates that the plot is:

- a. fanciful
- b. realistic

The pupil also must learn to appreciate *characterization*. The pupil should ask: What character did I like best? Which one would I like to be? Were the characters true to life?

The pupil learns characterization skills by analyzing statements and answering certain questions about them. For example:

- A. The man just sat. His eyes stared into empty space. No smile or grin ever adorned his face. When he spoke, it was about the wickedness of man and the burning fires of hell.

This series of sentences describes a person who is probably:

-a. discontented with life
-b. satisfied with life
-c. successful in life
-d. proud of living

- B. The wrinkled old man with curved back was ambling toward the park. Behind him in droves came the pat-pat of little feet. Little ones and not so little ones were laughing and jumping trying to get his attention.

This series of sentences describes an old man who:

-a. is discontented with life
-b. enjoys the little things of life
-c. has few friends
-d. is considered an old fogey

Or, the teacher may require the pupil to underline one of three words that best characterizes the person described in key sentences. For example:

- a. Jim grabbed Johnny by the shoulder and threw him against the wall. "That's for ratting on me."
Jim is generous, *unethical*, brave.
- b. Mary's eyes shot darts of fire at anyone who in the slightest way disagreed with her.
Mary is rude, generous, *opinionated*.

The third element is *style*. What was the writer's style? What figures of speech did he use? What was the general mood or tone of the writing?

Exercises such as the following may teach the pupil to read for style.

- A. We were awakened by the sound of a man trying to break open the door. Quietly my father peered out of the window but there was only darkness. The noise continued. My father got his revolver from the closet, loaded it, and we advanced toward the door with trepidation.

This series of sentences describes a set of circumstances characterized by:

-a. annoyance
-b. dismay
-c. fright
-d. anger

- B. Lori wiggled and crawled and splashed in the pool. It was her first outing for the summer and what an occasion it was.

This series of sentences describes a little girl who is:

-a. comfortable
-b. contented
-c. joyful
-d. successful

- C. All afternoon Marie thought of what would happen when her father would come home. She had just broken her father's favorite pipe. Then the moment came. Dad was just pulling up his ash tray and said, "Honey, where is my pipe?"

She is:

-a. ashamed
-b. embarrassed
-c. guilty
-d. shy

The fourth element is the *theme*. What was the moral of the story? Which character best exemplified the morals and ideals of the writer? How do the morals and ideals portrayed fit with the reader's morals?

The *Listen and Read Series*^{1, 2} devotes the last six tapes to the specific skills needed in literature. The tapes are entitled: "Finding Viewpoints in Essays," "The Magic of Storytelling," "Looking into the Lives of Others—The Novel," "Biography—The Story of People," "The Play's the Thing," and "The Sound of Poetry."

SOCIAL STUDIES *

Reading in the social studies is a special skill and one that the pupil is called upon to use innumerable times. The pupil must learn a new verbal vocabulary. He also must learn to handle new symbols: maps, charts, diagrams, and graphs. These we already have discussed. He needs to read critically.

The greatest demand put on the learner is perhaps that of requiring him to interpret relationships, especially cause-effect relationships.

In teaching the pupil to read social studies content one must begin with social-studies materials. The teacher must know what specific skills to teach and how they should be taught.

Let us dwell on the *how*:

1. Call attention to the new words, duplicate them for the pupil, use them in the appropriate context, and require pupils to use them.

* For additional discussion see: Paul A. Witty, "The Role of Reading in the Social Studies," *Elementary English*, 39 (October 1962) 562-569; also: Helen Huus, "Antidote for Apathy—Acquiring Reading Skills for Social Studies," *Challenge and Experiment in Reading*, International Reading Association Conference Proceedings, 7 (1962), 81-88.

2. Use films, charts, etc., to illustrate new concepts.
3. Require pupils to read for specific purposes: to answer a question, to identify the cause, to outline, etc.
4. Provide numerous activities that stimulate critical thinking and analysis.
5. Test and constantly evaluate the pupil's proficiency in reading social studies materials (p. 147).³⁰
6. Make assignments specific enough so the pupil will know how to read (p. 149).³⁰ For example, the teacher may require the pupil to identify the author's point of view.

MATHEMATICS

Reading in mathematics requires the pupil to comprehend a new set of symbols. He must react to numerical symbols that synthesize verbal symbols. He must be able to read and to compute. He must read deductively. He must translate formulas into meaningful relationships, and, generally, he must read slowly.

In mathematics, comprehension is not limited to the understanding of a story. It is not even limited to the understanding of one experiment. One concept is built on another in mathematics and can have meaning only on the basis of the understood meaning of the former. In no other area is it more true than in mathematics that new learning depends upon previous learning. However, not as in science, the pupil must disregard certain unnecessary information and latch on to the essential facts.

The pupil should early be introduced into the steps of reading mathematics. Bond and Wagner (p. 317)⁴ point out that the child must know what the problem calls for, what facts are needed for the solution, what steps are appropriate in leading to a solution, and what is the probable answer.

In learning to read in mathematics the pupil should:

1. Read for main ideas.
2. Read for organization, listing perhaps in one column the points given and in the second the points needed.
3. Translate the verbal symbols into mathematical symbols and formulas.
4. Read for relationships and translate these into an equation.
5. Analyze carefully all mathematical symbols and formulas.
6. Analyze carefully all graphs, figures, illustrations, etc.
7. Follow a definite procedure:
 - a. learn the meaning of all words.
 - b. find what the problem asks for.
 - c. decide what facts are needed to find a solution to the problem.

- d. decide what mathematical process is required (addition, subtraction, etc.).
 - e. identify the order for solving the problem.
8. Make a drawing of the problem. A problem such as the following can be easily represented by a drawing:
- Harry has fifteen pictures. If he can paste three pictures on each page of his scrapbook, how many pages will be filled?
9. Study the contrast between the way words are used in mathematics and in other areas.
10. Learn the proper symbols and abbreviations: ft. = foot; $7^3 = 343$.

SCIENCE *

Reading in science requires the ability to follow a sequence of events. Directions become a very important factor. The success of an experiment depends on the pupil's ability to follow directions. Reading in science as in mathematics usually is careful, analytical, and slow. It puts a premium on inductive reasoning and on detail. Every formula, chart, or graph is important. It demands a problem-solving approach similar to the steps of the scientific method. The pupil must learn to follow the scientist as he states the problem, enumerates the facts, formulates his hunch or hypothesis, investigates the facts to test the hypothesis, works toward his conclusion, and makes his verification. He must observe the facts, keep them in mind, relate them to each other, and determine whether or not they support a theory.

Science materials present the following additional difficulties:

1. Many of the terms are of a mathematical nature.
2. Many common words are used in a special sense (*force, body*).
3. Statements are concise (laws, definitions, formulas).

The teacher can help the pupil by:

1. Simplifying the vocabulary for most pupils—a meteorologist is simply a weatherman. The pupil needs to be taught how to comprehend technical symbols, graphs, maps, charts, diagrams, formulas, scales, and equations.
2. Having pupils read for the main idea—"The purpose of this experiment is . . ."
3. Having pupils organize the material, jotting down the steps in an experiment.

* See Don H. Parker, "Developing Reading in a Science Program," *Challenge and Experiment in Reading*, International Reading Association Conference Proceedings, 7 (1962), 88-90.

4. Using films to illustrate and develop concepts.
5. Helping pupils adjust reading speed to the difficulty of the material, the purposes for the reading, and the pupil's own familiarity with it.
6. Helping pupils to evaluate the competency of the writer or experimenter.
7. Teaching pupils to use the problem-solving technique: formulation of the hypotheses; collation of the evidence; evaluation and organization of the evidence; forming of a conclusion; and testing the conclusion.
8. Teaching pupils to recognize the sequence of steps.
9. Conducting hunts for information requiring the use of bibliographies, encyclopedias, card catalogue, etc.
10. Directing the pupils in developing summaries and outlines.

Summary

Essentially, this chapter has concerned itself with advancing the child's comprehension skills. From a literal interpretation we must lead him to cause-and-effect reasoning, drawing inferences, arriving at conclusions, and making generalizations. From mere obtaining of the facts we lead him to the interpretation of the deeper meanings.

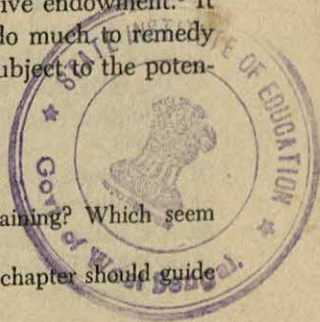
Although each of the specific skills discussed here reaches its culmination only in the upper grades and frequently not even then, the teacher of reading, as indeed all teachers, must encourage the development of each early in the primary grades. Even critical reading should begin in the primary grades. It is not "what to teach" but "how to teach" the skills that causes difficulty.

One of the prime tasks of the elementary school is that of teaching the pupil how to learn. The chapter has emphasized the use of reading for learning purposes.

Unfortunately, the ability to comprehend printed material is not entirely subject to development. Teaching cannot accomplish everything. The ability to remember word meanings and the ability to reason with verbal concepts are probably a part of the child's native endowment.⁶ It is doubtful that even an optimum environment can do much to remedy inadequate brain development. Skill development is subject to the potentialities that already exist.

Questions for Discussion

1. What comprehension skills seem not amenable to training? Which seem most amenable to training?
2. What principles in addition to those mentioned in this chapter should guide the teacher in the development of word meanings?



3. What types of organization do paragraphs normally fall into? Either write or locate materials that illustrate various organizations and that might be used at a third, fifth, or seventh grade level.
4. What is critical reading? How might newspapers be used to develop critical reading skills?
5. Discuss Robinson's SQRRR method and its appropriateness in the primary grades.
6. Discuss the special problems of map reading or their comprehension.
7. Discuss four kinds of graphs and the problems they present in interpretation.
8. What are the special reading problems in literature, mathematics, science, and social studies and how might they be dealt with in the daily class session?

Basic Reading Principles

1. Reaction to a word is more directly a function of experience than of context.
2. The specific meaning elicited by a word is a function of the context in which it occurs.
3. Perception of new words and the recognition of words that have been seen before occur more readily when these words are accompanied by familiar rather than unfamiliar words. (Syntax, for example, suggests the meaning of certain words, such as "for," "because," etc.)
4. Drill and training in comprehension increase comprehension achievement rather than comprehension potential.
5. Comprehension depends upon a vocabulary factor, intelligence factor, perceptual factor, interpretation-of-language factor (getting meaning from context), and speech factor.
6. Organizing of what is read as by summarizing or outlining is positively related to comprehension.
7. A study-type approach to reading generally results in better comprehension than either a mere reading or hearing approach.
8. Reading for learning is a positive function of the reader's facility with the symbols presented by the content. The better the child understands maps, tables, graphs, abbreviations, indexes, diagrams, and footnotes, the better his learning tends to be.
9. Learning from science materials is related positively to careful formulation of a problem to which a solution is sought.
10. The closer the reading skills stressed in a reading program are to the skills used in a specific content area, the more transfer occurs and the more the child tends to learn when reading in that area.
11. Intensive reading prevents useless practice of what the student already knows.
12. Extensive reading is more positively related to achievement than is intensive reading.
13. When the reader reads for a general view of the material and to get a quick glimpse of the organization, previewing is the most efficient method of reading.

14

MATERIALS FOR TEACHING

Books are written to be read, and materials in reading are designed for use. This means that the teacher must have knowledge of the materials available; he must know what the readability level of these materials is or at least know how to determine it, and he must understand the significance of format, type style, and type size. Thus, this chapter concerns itself with reading materials, readability, and legibility.

Materials for Teaching Reading

Children come to school wanting desperately to be readers. Their pre-school environment has been saturated with written and printed materials. In the drugstore, in the grocery store, along the streets, and on radio and television the pupil is bombarded by visual stimuli requiring interpretation. Almost all children have played school. They have played at teaching and being taught; at reading and being read to.

The school is in a position to foster this interest in the printed word or to stifle it. Unfortunately, sometimes it may be stifled by the very things that are designed to promote it. Reading materials at times are rather insipid and the pupil may turn away from reading.

If the teacher wants to, however, he can generally find materials that will stimulate interest in reading and *thinking through reading*. There are available today books that are attractive, challenging, and interesting to pupils in their earliest years. We have books that wait to be read; we have materials that teach reading. We have materials that teach the phonetic and structural analysis skills; materials that emphasize meaning; materials that stress goal-seeking behavior rather than rote drill; and materials that are well-organized to lead the pupil to higher levels of communication.

Materials of themselves are no panacea. Materials are useful only if they are part of a learning context. In this context reading is not merely a tool subject. It is not merely a skill that must be learned. Reading materials must present goals to the pupil. They must help the pupil to acquire knowledge, to satisfy his curiosity, and to lead him to social and emotional maturity. Reading materials must stir the emotions, modify attitudes and purposes, and provide escape from temporary cares.

Reading is related to the total process of child development. Through reading the child leads many lives. He experiences vicariously what is frequently not available first hand.

In short, reading materials must be meaningful. If the school's goal is simply that of teaching the pupil to learn to read and not to read for a purpose, then reading instruction will always be inadequate.

Unfortunately, in meeting the demands of "learning to read," writers and publishers have not always found a way of putting into books a content that is interesting, stimulating, informative, and purposive. Thus the numerous materials that we will suggest below must be evaluated by the user. It is as impossible to evaluate each here as it is impossible to list *all* the materials available.

A balanced program in reading instruction requires a wide variety of materials. We will concern ourselves in this chapter with basal and readiness materials, booklists, materials to improve comprehension, materials to improve recognition, collections of poems, fairy tales, riddles, rhymes, games, magazines, and plays, encyclopedias, various types of audio-visual materials, and mechanical devices.

Basal Readers

In the greatest number of schools the basal reader is still the most important material used in the reading program. Its importance seems especially significant in the primary years.

All basal series provide a series of workbooks and many workbooks have been developed apart from basal series. These are especially useful in meeting individual needs, in providing opportunities for practice, in varying instructional procedures, and in making optimum use of pupil and teacher time.

In some workbooks today there is an attempt to apply the same principles as do the best programmed learning materials. The pupil is introduced to word recognition and comprehension skills in small steps and advances to higher levels only after successful completion of the simpler task.

A survey¹ of some 150 public elementary schools and some 1300 teachers of first through sixth grade children indicates that from 88 to 95 per cent of the teachers considered the basal series of readers as

very important or absolutely essential, and from 60 to 75 per cent considered a second basic series as essential. From 88 to 90 per cent of the teachers considered a classroom library of many varied books as very important or essential, and from 79 to 88 per cent considered special materials for retarded readers as essential. Of the teachers surveyed, from 54 to 60 per cent considered workbooks as essential, and from 29 to 38 per cent considered reading machines as very important or essential. A fourth of the first grades used experience charts on all or most days.

In previous chapters we have emphasized that the reading program must develop skills in the ability to think conceptually; in auditory and visual discrimination; in handling the alphabet; and in moving from left to right in reading. The reading program must provide a sight vocabulary, the ability to work out the pronunciation of words, and the ability to associate meanings with printed symbols.

The basal reading program leads the pupil by logical and sequential steps to the mastery of these skills. In Chapter 9 we commented briefly on basal materials, especially those now used on the primary level. It is perhaps true that basal readers in their attempt to provide systematic instruction, controlled vocabularies, and mastery of the basic reading skills have failed to some degree in providing purposeful reading. Be that as it may, they have been shown to be helpful in developing reading proficiency in most children. They represent what many people believe to be the "best" materials available for leading the child from the pre-reading stage to actual reading. Let us then begin with a listing of the basal reading series.

1. *The Alice and Jerry Basic Reading Program*, Harper and Row, Publishers.*

<i>Here We Go</i> (Readiness)	<i>Down the River Road</i> (Reader 2)
<i>Over the Wall</i> (Readiness)	<i>Friendly Village</i> (Reader 2)
<i>Skip Along</i> (Preprimer)	<i>Through the Green Gate</i> (Reader 3)
<i>Under the Sky</i> (Preprimer)	<i>If I Were Going</i> (Reader 3)
<i>Open the Door</i> (Preprimer)	<i>Singing Wheels</i> (Reader 4)
<i>High On a Hill</i> (Preprimer)	<i>From Codes to Captains</i> (Reader 4)
<i>Day In and Day Out</i> (Primer)	<i>Engine Whistles</i> (Reader 5)
<i>Round About</i> (Reader 1)	<i>Runaway Home</i> (Reader 6)

2. *Betts Basic Readers*, American Book Company.

<i>Fun for All</i> (Readiness)	<i>Down Singing River</i> (Reader 2)
<i>Ready! Go!</i> (Readiness)	<i>Over a City Bridge</i> (Reader 2)
<i>On Our Way</i> (Preprimer)	<i>Beyond Treasure Valley</i> (Reader 3)
<i>Time to Play</i> (Preprimer)	<i>Along Friendly Roads</i> (Reader 3)
<i>All in a Day</i> (Preprimer)	<i>American Adventures</i> (Reader 4)
<i>Up the Street and Down</i> (Primer)	<i>Adventures Here and There</i>
<i>Around Green Hills</i>	(Reader 5)
(Reader 1)	<i>Adventures Now and Then</i>
	(Reader 6)

* For addresses, consult the list of publishers at the end of this chapter.

3. *Building Reading Skills Series*, McCormick-Mathers.

<i>Speedboat Book</i> (Level 1)	<i>Rocket Book</i> (Level 4)
<i>Streamliner Book</i> (Level 2)	<i>Atomic Submarine</i> (Level 5)
<i>Jet Plane Book</i> (Level 3)	<i>Space Ship Book</i> (Level 6)

4. *Catholic University of America Faith and Freedom Series*, Ginn and Company.

This is a complete basal program for Catholic schools, including readiness and preprimer to eighth-grade materials. It offers workbooks, readers, phonics books, picture- and word-cards, key charts, and tests.

5. *Developmental Reading Series*, Lyons & Carnahan.

<i>Pictures to Read</i> (Readiness)	<i>Many Surprises</i> (Primer)
<i>Stories in Pictures</i> (Readiness)	<i>Happy Times</i> (Reader 1)
<i>Three of Us</i> (Preprimer)	<i>Down Our Way</i> (Reader 2)
<i>Play With Us</i> (Preprimer)	<i>Just for Fun</i> (Reader 2)
<i>Fun With Us</i> (Preprimer)	<i>Stories From Everywhere</i> (Reader 3)
<i>Ride With Us</i> (Preprimer)	<i>Once Upon a Storytime</i> (Reader 3)
Co-Basal Preprimers	<i>Meeting New Friends</i> (Reader 4)
<i>See Us Come</i> (1)	<i>Days of Adventure</i> (Reader 5)
<i>See Us Play</i> (2)	<i>Stories to Remember</i> (Reader 6)
<i>See Us Have Fun</i> (3)	<i>A Call to Adventure</i> (Reader 7)
<i>See Us Ride</i> (4)	<i>Deeds of Men</i> (Reader 8)

6. *Developmental Reading Text-Workbooks*, Bobbs-Merrill Company, Inc.

<i>Ted and Polly</i> (Primer)	<i>Blazing New Trails</i> (Reader 4)
<i>Up and Away</i> (Grade 1)	<i>Flying High</i> (Reader 5)
<i>Animal Parade</i> (Grade 2)	<i>Shooting Stars</i> (Reader 6)
<i>Picnic Basket</i> (Grade 3)	

7. *Easy Growth in Reading Series*, Holt, Rinehart, & Winston, Inc.

<i>Mary and Bill</i> (Preprimer)	<i>Along the Way</i> (Reader 2)
<i>Mac and Muff</i> (Preprimer)	<i>The Story Road</i> (Reader 2)
<i>The Twins, Tom and Don</i> (Preprimer)	<i>Faraway Ports</i> (Reader 3)
<i>Going to School</i> (Preprimer)	<i>Enchanting Stories</i> (Reader 3)
<i>At Play</i> (Primer)	<i>Today and Tomorrow</i> (Reader 4)
<i>Fun in Story</i> (Primer)	<i>Looking Forward</i> (Reader 5)
<i>I Know a Secret</i> (Reader 1)	<i>Moving Ahead</i> (Reader 6)
<i>Good Stories</i> (Presecond Reader)	<i>Discovery</i> (Grade 7)
	<i>Exploration</i> (Grade 8)

8. *Economy Reading Workbooks*, Economy Company.

<i>Tag</i> (Preprimer)	<i>Through Happy Hours</i> (Grade 2)
<i>Dot and Jim</i> (Primer)	<i>As Days Go By</i> (Grade 2)
<i>All Around with Dot and Jim</i> (Grade 1)	<i>Along New Ways</i> (Grade 3)
	<i>Wide Doors Open</i> (Grade 3)

9. *Gateway to Reading Treasure Series*, Laidlaw Brothers.

<i>Tales to Read</i> (Primer)	<i>Storyland Favorites</i> (Book 2)
<i>Stories to Remember</i> (Book 1)	<i>Doorways to Adventure</i> (Book 3)

10. *Get Ready to Read Series*, Bobbs-Merrill Company, Inc.

<i>Don and Peggy</i> (Preprimer)	<i>Our Happy Ways</i> (Reader 1)
<i>Come and See</i> (Preprimer)	<i>Meet Our Friends</i> (Reader 2)
<i>Here We Play</i> (Preprimer)	<i>Our Good Neighbors</i> (Reader 3)
<i>Days of Fun</i> (Primer)	

11. *Ginn Basic Readers*, Ginn and Company.

<i>Fun with Tom and Betty</i> (Readiness)	<i>On Cherry Street</i> (Reader 1)
<i>Games to Play</i> (Readiness)	<i>We are Neighbors</i> (Reader 2)
<i>My Little Red Story Book</i> (Preprimer)	<i>Around the Corner</i> (Reader 2)
<i>My Little Green Story Book</i> (Preprimer)	<i>Finding New Neighbors</i> (Reader 3)
<i>My Little Blue Story Book</i> (Preprimer)	<i>Friends Far and Near</i> (Reader 3)
<i>The Little White House</i> (Primer)	<i>Roads to Everywhere</i> (Reader 4)
	<i>Trails to Treasure</i> (Reader 5)
	<i>Wings to Adventure</i> (Reader 6)
	<i>Doorways to Discovery</i> (Reader 7)
	<i>Windows on the World</i> (Reader 8)

12. *Great Cities Reading Program*, Follett Publishing Company.

<i>Play With Jimmy</i> (Preprimer)	<i>Laugh With Larry</i> (Preprimer)
<i>Fun With David</i> (Preprimer)	

13. *Learning to Read Series*, Silver Burdett Company.

<i>Our First Book</i> (Prereading)	<i>With New Friends</i> (Reader 2)
<i>Bill and Susan</i> (Preprimer)	<i>From Sea to Sea</i> (Reader 3)
<i>Under the Tree</i> (Preprimer)	<i>Over Hill and Plain</i> (Reader 3)
<i>Through the Gate</i> (Primer)	<i>Distant Doorways</i> (Reader 4)
<i>Down the Road</i> (Reader 1)	<i>Frontiers Old and New</i> (Reader 5)
<i>In New Places</i> (Reader 2)	<i>On the Long Road</i> (Reader 6)

14. *The Macmillan Readers*, The Macmillan Company.

<i>Splash</i> (Preprimer)	<i>Good Times Today</i> (Reader 3)
<i>Tuffy and Boots</i> (Preprimer)	<i>Good Times Tomorrow</i> (Reader 3)
<i>At the Lake</i> (Preprimer)	<i>Sharing Adventures</i> (Reader 4)
<i>Ted and Sally</i> (Primer)	<i>The World I Know</i> (Reader 5)
<i>On Four Feet</i> (Reader 1)	<i>All Around Me</i> (Reader 6)
<i>Today We Go</i> (Reader 2)	<i>Here and Everywhere</i> (Reader 7)
<i>New Friends and New Places</i> (Reader 2)	<i>Tales for Today</i> (Reader 8)

15. *The New Basic Readers*, Scott, Foresman and Company.

<i>We Read Pictures</i> (Readiness)	<i>The New Streets and Roads</i> (Reader 3)
<i>We Read More Pictures</i> (Readiness)	<i>The New More Streets and Roads</i> (Reader 3)
<i>The New Before We Read</i> (Readiness)	<i>Just Imagine!</i> (3-slow)
<i>The New We Look and See</i> (Preprimer)	<i>The New Times and Places</i> (Reader 4)
<i>The New We Work and Play</i> (Preprimer)	<i>The New More Times and Places</i> (Reader 4)
	<i>The New Days and Deeds</i>

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| <i>The New We Come and Go</i>
(Preprimer) | (Reader 5) |
| <i>Guess Who</i> (Primer) | <i>More Days and Deeds</i> (Reader 5) |
| <i>The New Fun With Dick and Jane</i> (Reader 1) | <i>The New People and Progress</i>
(Reader 6) |
| <i>Our New Friends</i> (Reader 1) | <i>More People and Progress</i>
(Reader 6) |
| <i>The New Friends and Neighbors</i>
(Reader 2) | <i>Parades</i> (Reader 7) |
| <i>The New More Friends and Neighbors</i> (Reader 2) | <i>More Parades</i> (Reader 7) |
| | <i>Panoramas</i> (Reader 8) |
| | <i>More Panoramas</i> (Reader 8) |
16. *Prose and Poetry Series*, L. W. Singer Company.
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| <i>Story Wagon</i> (Primer) | <i>Along The Sunshine Trail</i> (Grade 4) |
| <i>Story Time</i> (Grade 1) | <i>Across the Blue Ridge</i> (Grade 5) |
| <i>Story Train</i> (Grade 2) | <i>Aboard the Story Rocket</i> (Grade 6) |
| <i>Story Carnival</i> (Grade 3) | |
17. *The Quinlan Basic Readers*, Allyn and Bacon, Inc.
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| <i>Reading Pictures</i> (Readiness) | <i>To and Fro</i> (Reader 1) |
| <i>Tots and Toys</i> (Preprimer) | <i>Fact and Fancy</i> (Reader 2) |
| <i>Winky</i> (Preprimer) | <i>Faces and Places</i> (Reader 2) |
| <i>Happy Days</i> (Readiness Primer) | <i>Coast to Coast</i> (Reader 3) |
| | <i>Busy World</i> (Reader 3) |
18. *Reading Essentials Series*, Steck Company.
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| <i>Come and Play</i> (Preprimer) | <i>New Journeys in Reading</i> (Grade 5) |
| <i>Fun Time</i> (Grade 1) | <i>New Adventures in Reading</i>
(Grade 6) |
| <i>Play Time</i> (Grade 2) | <i>Progress in Reading</i> (Grade 7) |
| <i>Work Time</i> (Grade 3) | <i>Progress in Reading</i> (Grade 7) |
| <i>New Avenues in Reading</i>
(Grade 4) | <i>Mastery in Reading</i> (Grade 8) |
19. *Reading for Interest Series, Revised*, D. C. Heath & Company.
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| <i>See and Do</i> (Readiness) | <i>Something Different</i> (Reader 1) |
| <i>Ned and Nancy</i> (Preprimer) | <i>Lost and Found</i> (Reader 2) |
| <i>Bigger and Bigger</i> (Preprimer) | <i>Secrets and Surprises</i> (Reader 2) |
| <i>Little Lost Dog</i> (Preprimer) | <i>Fun and Frolic</i> (Reader 3) |
| <i>Molly, Pete, and Ginger</i>
(Preprimer) | <i>Do and Dare</i> (Reader 3) |
| <i>A Home for Sandy</i> (Primer) | <i>Luck and Pluck</i> (Reader 4) |
| <i>Rain and Shine</i> (Primer) | <i>Merry Hearts and Bold</i> (Reader 5) |
| | <i>The Brave and Free</i> (Reader 6) |
20. *Reading for Meaning Series, Revised Edition*, Houghton Mifflin Company.
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|---|-----------------------------------|
| <i>Learning Letter Sounds</i> | <i>Come Along</i> (Reader 2) |
| <i>Getting Ready to Read</i>
(Readiness) | <i>On We Go</i> (Reader 2) |
| <i>Tip</i> (Preprimer) | <i>Looking Ahead</i> (Reader 3) |
| <i>Tip and Mitten</i> (Preprimer) | <i>Climbing Higher</i> (Reader 3) |
| <i>The Big Show</i> (Preprimer) | <i>High Roads</i> (Reader 4) |
| <i>With Jack and Janet</i> (Primer) | <i>Sky Lines</i> (Reader 5) |
| <i>Up and Away</i> (Reader 1) | <i>Bright Peaks</i> (Reader 6) |

21. *Sheldon's Basic Reading Series*, Allyn and Bacon, Inc.

<i>Picture Stories</i> (Readiness)	<i>Town and Country</i> (Reader 2)
<i>More Picture Stories</i> (Readiness)	<i>Magic Windows</i> (Reader 3)
<i>At Home</i> (Preprimer)	<i>Story Caravan</i> (Reader 3)
<i>Here and Near</i> (Preprimer)	<i>Believe and Make-Believe</i>
<i>At Home and Away</i> (Preprimer)	(Reader 4)
<i>Here and Away</i> (Preprimer)	<i>Arrivals and Departures</i> (Reader 5)
<i>Our School</i> (Primer)	<i>Finding the Way</i> (Reader 5)
<i>Our Town</i> (Reader 1)	<i>High Trails</i> (Reader 7)
<i>Fields and Fences</i> (Reader 2)	<i>Widening Views</i> (Reader 8)

22. *Winston Basic Readers*, Holt, Rinehart, and Winston, Inc.

<i>Ready to Go</i> (Readiness)	<i>People on Parade</i> (Reader 2)
<i>Ready to Read</i> (Readiness)	<i>Into the Wind</i> (Reader 3)
<i>Come Here</i> (Preprimer)	<i>Across the Valley</i> (Reader 3)
<i>Stop and Look</i> (Preprimer)	<i>Around the Bend</i> (Reader 4)
<i>Go Up</i> (Preprimer)	<i>Above the Clouds</i> (Reader 4)
<i>Come With Me</i> (Primer)	<i>Through the Years</i> (Reader 5)
<i>Away We Go</i> (Reader 1)	<i>Skyways to Tomorrow</i> (Reader 6)
<i>Friends All About</i> (Reader 2)	

The most common supplementary materials to the basal readers, as we have already noted, are the numerous workbooks that accompany each of them. Of the basal series listed above, for example, some common workbook series are the "Activity Books" that accompany the *Sheldon Basic Reading Series*, the "My Help to Read Books" that accompany the *Get-Ready to Read Series*, the "Do and Learn Books" that are a part of the *Reading for Interest Series*, the "Fun to Do Workbooks" that accompany the *Developmental Reading Series*, and the "Think and Do Books" that accompany the *The New Basic Reading Series*. These workbooks drill the pupil in developmental reading skills. They provide the repetition, self-competition, and day-to-day record that make it possible for the pupil to grow and for the teacher to diagnose and to remediate the pupil's inadequacies.

Readiness Materials

Each of the basal series has a reading readiness program. *Getting Ready to Read** is an example of such a program. In six units the pupil is taught how to use the spoken context, to distinguish letter forms from one another, to listen for beginning sounds, to associate letter sounds and forms, to use spoken context and letter-sound associations, and to use spoken context and the first letter in a printed word. The last two steps were described in the Readiness Chapter.

The *Getting Ready to Read* program is accompanied by letter cards, objects to illustrate and teach the sounds, containers to hold the objects,

* Houghton Mifflin Company, Boston, 1962.

Letto Cards (a form of letter bingo), picture and key cards, and a pocket chart. Each lesson is carefully developed for the teacher. The *Teacher's Manual* tells the teacher how to prepare the lesson, how to develop it, and how to provide for individual differences.

In addition to the readiness materials that accompany the basal reading series, there have been developed books, games, audio-visual aids, readers, and other supplementary materials that are designed to help the pupil through the *preparatory* stage of reading. They are designed to develop the pupil's discrimination skills, his ability to follow a story sequence, to associate meaning with pictures and words, to see relationships, to sense likenesses and differences, and to identify a printed symbol.

During the readiness period the teacher needs to identify the differences in children, for these differences will determine what adaptations he will have to make in the reading fare. What works for one will not work for another. The seemingly inconsequential "readiness game" may be the stimulus that starts the pupil on a joyous adventure of reading. It simply cannot be said that some materials are entirely inconsequential or useless.

Let us then suggest some supplementary readiness materials that may be useful during the preparatory reading period.

1. *ABC Preprimer*, Hayes School Publishing Company.

This revised duplicating edition includes a color dictionary and stresses similarity in words and objects.

2. *Adventures in Reading Readiness Workbook*, Noble & Noble, Publishers, Inc.

This workbook for kindergarten and first grade includes drill in phonics and emphasizes a vocabulary of one hundred basic words.

3. *Animal Friend Series*, Society for Visual Education.

(For description see section on audio-visual materials.)

4. *Beckley-Cardy Reading Readiness Materials*, Beckley-Cardy Company.

1. *Reading Readiness Picture Cards*, Sets 1, 2, & 3.

2. *Ideal Reading Charts*

- a. *Reading Readiness Charts*

- b. *Initial and Final Consonant Charts*

- c. *Blends and Digraphs Charts*

- d. *Vowel Charts*

3. *Ideal Magic Card Sets*

4. *Primary Reading Cards*

5. *Alphabet Flash Cards*

5. *Color ABC*, The Platt & Munk Co., Inc.

This book has 26 full-page color pictures to illustrate both capital and lower case letters.

6. *Continental Press Reading Readiness Program*, Continental Press, Inc.

This program consists of 12 titles covering rhyming, visual motor skills, visual discrimination, beginning sounds, independent activities, and thinking skills. (See Readiness chapter for sample exercises of this series.) All materials are sold in liquid-duplicator form so they can be reproduced for classroom use.

7. *Follett Beginning-to-Read Books*, Follett Publishing Company.

These 19 books, ranging in difficulty level from first to third grade, include such titles as *Nobody Listens to Andrew*, *Gertie the Duck*, *Something New at the Zoo*, *The Follett Beginning-to-Read Picture Dictionary*, *Mabel the Whale*, *Benny and the Bear*, *The Hole in the Hill*, and *The Boy Who Would Not Say His Name*.

8. *Fun With Tom and Betty*, Ginn & Company.

This reading readiness book is accompanied by a record with songs for the reading readiness program.

9. *Games to Play*, Ginn & Company.

10. *Getting Ready to Read*, Highlights Inc.

This handbook helps youngsters to develop left-to-right movement, to identify shapes and symbols, to follow directions, and to think.

11. *Getting Ready to Read Workbook*, E. M. Hale & Company.

12. *Kiddie Self-Readers*, Kenworthy Educational Service Inc.

This series of beginning books includes the following titles: *A Coat for Gray-One*, *Chief Mischief*, *What Fox Did Not Know*, and *Mud Turtle and the Lake Maker*.

13. *Learning to Think Series*, Science Research Associates.

This series of materials teaches children to deal with words, space concepts, ideas, and numbers; it teaches the child to reason, to perceive quickly, and to improve memory. There are three texts of increasing difficulty: the *Red Book*, the *Blue Book*, and the *Green Book*.

14. *Let's Learn to Read*, Steck Company.

This readiness workbook introduces the pupil to the skills necessary for successful reading.

15. *Let's See*, Webster Publishing Company.

This book offers a readiness program in word analysis for grade one.

16. *Match-Me*, Benton Review Publishing Company.

This is a readiness game on the kindergarten and preprimer level that requires the child to match pictures.

17. *McCormick-Mathers Puzzle Series*, McCormick-Mathers Publishing Company.

This series of *New Puzzle Pages* and *My Puzzle Books* for kindergarten through grade two develops visual discrimination, word attack skills, phonics, sight vocabulary, and comprehension.

7. Baker, Augusta, *Books about Negro Life for Children*, New York Public Library.

8. *Bibliography of Books for Children*, Association for Childhood Education International, 1960.

9. *Books for Slow Readers*, Holiday House.

This is a series of selected titles for the slow or reluctant reader.

10. Brewton, John E., and Brewton, Sara W., *Index to Children's Poetry*, H. W. Wilson Company, 1954.

11. *Children's Literature About Foreign Countries*, H. W. Wilson Company, 1957.

This is an annotated and graded list of children's literature.

12. Condit, Martha Olson, *Trade Books for Beginning Readers*, H. W. Wilson Company.

Books listed are for grades one and two.

13. Cook, Dorothy E., and Monro, Isabel S., *Short Story Index*, H. W. Wilson Company, 1953, 1956, 1960.

14. Davis, E. Louise, *Library Journal's Recommended Children's Books of 1960-1961*, R. R. Bowker Company.

15. Dawson, Mildred A., and Pfeifer, Louise, *A Treasury of Books for the Primary Grades*, National Council of Teachers of English.

This is an annotated bibliography of 300 books for kindergarten and primary children.

16. Eakin, Mary K. ed., *Good Books for Children*, University of Chicago Press, Chicago, 1959.

This lists 1000 books published over a ten-year period.

17. Eaton, Anne Thaxter, *Treasure for the Taking: A Book List for Boys and Girls*, The Viking Press, Inc., 1957.

18. *Five Year Fanfare: Honor Book List*, Horn Book Inc.

This contains the best books of 1956-1960.

19. Giles, R. and Cook, D., *Children's Catalog*, H. W. Wilson Company.

This is a list of over 3000 annotated books for elementary children. The tenth edition was issued in 1961.

20. *A Graded List of Books for School Libraries*. Harcourt, Brace & World, Inc.

This list contains sight-saving books and books for slow learners. It lists books by curriculum topics.

21. Groff, Patrick, "Recent Easy Books for First-Grade Readers." *Elementary English*, (December, 1960), 521-527.

22. *Growing Up with Books*, R. R. Bowker Company.

This is published annually in September and is a list of 250 of the best children's books.

23. *Growing Up With Science Books*, R. R. Bowker Company.

This is published annually in September and is a list of 200 of the best books in science for children.

24. Guilfoile, Elizabeth, *Books for Beginning Readers*, National Council of Teachers of English.

This is a list of some 320 books for first- to third-grade immature readers.

25. *Hale Guide to Better Books*, E. M. Hale and Company.

This 1961-1962 catalog is a listing of the *Cadmus Books*, *Landmark Books*, *All about Books*, *Magic Window Books*, and the *Hale Workbooks*. Indexes of books by authors and by titles are provided. The Cadmus series includes 440 books chosen for their excellence and their interest. The Landmark series includes 62 titles with such titles as: *Rise and Fall of Adolf Hitler*, *The Battle of Britain*, *The Story of the Paratroops*, and *Guadalcanal Diary*. Thirty-six Allabout books are offered.

26. Hanna, Geneva R., and McAllister, Mariana K., *Books, Young People and Reading Guidance*, Harper & Row, Publishers, 1960.

27. Hazen, Meribah, *Subject Index to Children's Literature*, Madison, Wisconsin.

This indexes about 40 magazines and is issued monthly except for June and July.

28. *I Can Read It Myself*, Ohio State University, Columbus, Ohio.

This is a graded, annotated bibliography of over 300 books that the primary child can read independently.

29. Jacobs, Allan D., "Economics Through Children's Books." *Elementary English*, 38 (January 1961), 15-21.

This is a list of books for later-elementary grades that deal with such topics in economics as clothing, ocean resources, food, health, modes of transportation, people on the job, power, products through work, shelter, and water.

30. Jacobs, Leland B., *Book Ways to the World: A Book List for Children and Young People*, Combined Book Exhibit Inc.

31. Johnson, Edna, Sickels, Evelyn R., and Sayers, Frances Clarke. *Anthology of Children's Literature*, Houghton Mifflin Company, 1959.

32. Jordan, Alice M., *Children's Classics*, Horn Book, Inc.

This is an annotated list of 66 classics for children.

33. Kingery, Robert E., *How-To-Do-It Books*, R. R. Bowker Company, 1961.

This is a list of how-to-do-it books, pamphlets, and bulletins.

34. Library Journal and Junior Libraries, *A Catalog of 3300 of the Best Books for Children*, R. R. Bowker Company, 1961.

35. Martin, Marvin, "Fifty Books They Can't Resist," *Elementary English*, 39 (May 1962) 415-417.

This is a list of fifty books selected by sixth graders as so interesting that they found it difficult to put them down before finishing them.

36. Matson, Charlotte and Lola, Larson. *Books for Tired Eyes*, American Library Association.

This is a list of books for children of low visual acuity.

37. Mathes, Miriam Snow, *A Basic Book Collection for Elementary Grades*, American Library Association, 1960.

This is a list of more than 1000 books arranged by subject.

38. Miller, Bertha M., and Field, Elinor W. ed., *Newbery Medal Books*, 1922-1955, Horn Book, Inc.

This includes a list of books, Newbery acceptance speeches, and biographies of the authors.

39. Miller, Bertha M., and Field, Elinor W. ed., *Caldecott Medal Books*, 1938-1957, Horn Book, Inc.

40. Mosel, Arlene, *Tell Me Another*, H. W. Wilson Company, 1960.

This is an annotated list of stories that may be read aloud.

41. Prakken, Sarah L. ed., *Subject Guide to Books in Print: An Index to the Publishers Trade List Annual*, R. R. Bowker Company, 1960.

42. Reid, Virginia M., "Weaning Books," *Elementary English*, 38 (January 1961) 8-9.

These are books to "wean" children from reading *only* readers.

43. *Science Book List for Children*, American Association for the Advancement of Science, 1515 Massachusetts Ave., N. W., Washington 5, D. C.

This is a guide to scientific and mathematical works for grades one through eight.

44. Sell, Violet *et al.*, *Subject Index to Poetry for Children and Young People*, American Library Association.

This indexes 157 poetry collections.

45. Spache, George D., *Good Reading for Poor Readers*, Garrard Press, Champaign, Illinois.

46. Strang, Ruth, *Gateways to Readable Books: An Annotated Graded List of Books in Many Fields for Adolescents Who Find Reading Difficult*, H. W. Wilson Company.

47. *Subject Guide to Books in Print*, 1961, R. R. Bowker Company.

This book lists 25,000 subject heads and some 110,000 books that treat these subjects.

48. Suchara, Helen, *Children's Books for \$1.25 or Less*, Association for Childhood Education.

This is a classified list of inexpensive books.

49. Sullivan, H. B., and Tolman, L. E., *High Interest—Low Vocabulary Reading Materials*, Journal of Education, Boston University, 1956.

50. *Trade Books for Beginning Readers*, H. W. Wilson Company, 1959.

This is a list of annotated and graded books for independent reading by first and second graders.

51. Turner, Mary C., *Best Books for Children; Including Adult Books for Young People*, R. R. Bowker Company.
52. *Walck Books for Boys and Girls*, Henry Z. Walck, Inc.

This is a graded list for schools and libraries. It lists books for boys and girls from preschool age through teenage and contains books of adventure and animals; on arithmetic enrichment, art, the Bible; biographies; stories about careers, character development, and circuses; classic collections; stories of community life and farming; fairy tales; stories of foreign lands; games and riddles; historical fiction; studies of machines; music, nature; poetry and verse; sea stories; stories on religion; science, transportation, and history.

53. Wallace, Viola, *Books for Adult Beginners: Grades I to VII*, American Library Association, 1954.
54. Wernon, Irving, *Annotated List of Books for Supplementary Reading (Kindergarten-Senior High School)*, Materials for Learning, Inc.
This list also includes books on a K-8 grade level that are on a fourth to seventh grade interest level; atlases, dictionaries, and encyclopedias.
55. West, Dorothy H., and Peake, Dorothy M., *Play Index*, H. W. Wilson Company, 1953.

Supplementary Reading Series

One of the school's chief roles is to foster independent reading by children. A reading program must make provisions for recreational and supplementary reading. The reading teacher occupies a strategic place in this regard. He can do most to encourage or discourage reading.

In the previous section we suggested common book lists. In this section we are concerned chiefly with book series that compliment the basal reading series. We have divided these reading series into primary and intermediate levels. Generally, we have put into the primary level any series that begins its programs on a kindergarten, first-, or second-grade level.

PRIMARY LEVEL MATERIALS

1. *All about Books Series*, Random House.

This series contains such titles as *All About Sound and Ultrasonics*, *All About the US Navy*, *All About the Planets*, *All About Fish*, *All About Great Medical Discoveries*, *All About Archaeology*, *All About the Atom*, *All About the Desert*, *All About the Insect World*, and *All About Monkeys*.

2. *American Adventure Series*, Harper & Row, Publishers.

This series of 18 graded books is especially useful in corrective reading programs. The following titles are offered: *Portugee Phillips*, *Friday, the Arapaho Indian*, *Squanto and the Pilgrims*, *Pilot Jack Knight*, *Alec Majors*, *Chief Black Hawk*, *Grant Marsh—Steamboat Captain*, *Dan Morgan—Rifle-*

man, *Cowboys and Cattle Trails*, Kit Carson, *Sabre Jet Ace*, *Buffalo Bill*, *Wild Bill Hickock*, *Davy Crockett*, *Daniel Boone*, *Fur Trappers of the Old West*, *The Rush for Gold*, and *John Paul Jones*.

3. *Basic Vocabulary Series*, Garrard Press.

Based on Dolch's 220 Basic Sight Words, these stories have a second grade reading level. The stories have an interest level of first to sixth grade. They emphasize folklore, animal stories, and Indian folklore.

4. *Beginner Books*, Random House.

This series of first- and second-grade books includes such titles as *Little Black*, *A Pony*, *Look Out for the Pirates*, *A Fish Out of Water*, *More Riddles*, *Ten Apples Up on Top*, *Go, Dog, Go!*, *The Cat in the Hat*, *A Fly Went By*, *Sam and the Firefly*, *Green Eggs and Ham*, *Put Me in the Zoo*, and *Are You My Mother?*

5. *Best of Children's Literature Series*, Bobbs-Merrill Company, Inc.

This series of six books for grades one through six includes the following titles: *Sunny and Gay*, *Foolish and Wise*, *Fun All Around*, *Shining Hours*, *Time for Adventure*, and *Beyond the Horizon*.

6. *Blackberry Farm Books*, David McKay Co., Inc.

This series of books for ages five and below on farm subjects includes such titles as: *Ernest Owl Starts a School*, *Lucy Mouse Keeps a Secret*, *Mrs. Squirrel and Hazel*, and *Rusty the Sheep Dog*.

7. *Button Family Adventures Series*, Benefic Press.

This series has twelve titles from preprimer to third-grade level designed to support the basic reading program: *The Buttons at the Zoo*, *The Buttons See Things That Go*, *Bucky Button*, *The Buttons and the Whirlybird*, *The Buttons Take a Boat Ride*, *The Buttons and the Pet Parade*, *The Buttons and Mr. Pete*, *The Buttons At the Farm*, *The Buttons and the Boy Scouts*, *The Buttons Go Camping*, *The Buttons and the Little League*, and *The Buttons at the Soap Box Derby*.

8. *Cowboy Sam Series*, Benefic Press.

This high-interest series has fifteen titles including the following: *Cowboy Sam and Big Bill*, *Cowboy Sam and Miss Lily*, *Cowboy Sam and the Rustlers*, and *Cowboy Sam and the Rodeo*. Difficulty level ranges from preprimer to third grade.

9. *Dan Frontier Series*, Benefic Press.

This series has seven titles (such as *Dan Frontier Goes Hunting*, *Dan Frontier with the Indians*, and *Dan Frontier and the Wagon Train*) ranging from preprimer to third-grade level in difficulty.

10. *Deep-Sea Adventure Series*, Harr Wagner Publishing Company.

This series contains the titles: *The Sea Hunt*, *Treasure Under the Sea*, *Submarine Rescue*, *The Pearl Divers*, and *Frogmen in Action*. It is designed to bring the child with a first-grade vocabulary up to fourth grade level.

11. *De Vault Books Series*, Steck Company.

This series for grades three through seven contains such titles as *Botany*,

Sir Isaac Newton, What is Money, Psychology, Physics, Geology, Physiology, The American Buffalo, and The Jack Rabbit.

12. *Discovery Books Series*, Garrard Press.

Designed for grades two to four, these books are devoted to the lives of Henry Hudson, George Washington Carver, Benjamin Franklin, Daniel Boone, Theodore Roosevelt, Clara Barton, Abraham Lincoln, and Lafayette.

13. *Easy Reading Picture Story Books*, Childrens Press, Inc.

This series of four books for grade two contains such titles as *Johnny and the Monarch, The Man Who Walked Around the World, Perky Little Engine*, and *Read with Me*.

14. *Easy-to-Read Series*, Benefic Press.

All six "Easy-to-Read Books" are on the preprimer to first-grade level.

15. *Fairy Tales of Many Lands Series*, E. P. Dutton and Company, Inc.

This series of four books for ages six to nine tells fairy tales of Persia, Japan, Denmark, and Greece.

16. *Faith and Freedom Literary Readers*, Ginn & Company.

A series of readers for grades one through eight teaching Catholic principles of living.

17. *The First Books Series*, D. C. Heath and Company.

The series, designed for grades three to six, includes, among others, first books of music, words, bees, birds, electricity, airplanes, presidents, and trucks.

18. *First Reading Books*, Garrard Press.

These books are designed for first graders and are entitled, *Big, Bigger, Biggest, Dog Pals, Friendly Birds, I Like Cats, In the Woods, Monkey Friends, On the Farm, Tommy's Pets*, and *Zoo is Home*.

19. *Folk and Fairy Tales Series*, Charles E. Merrill Books, Inc.

This series contains folk and fairy tales for pupils in grades one through four.

20. *Folklore of the World Series*, Garrard Press.

Designed for grade three the books are entitled *Stories from Japan, Stories from Hawaii*, and *Stories from Mexico*.

21. *The Frontiers of America Books*, Childrens Press, Inc.

These eleven titles on third-grade level include such titles as *Cumberland Gap and Trails West, Mail Riders, Pioneers on Early Waterways*, and *Wagons Over the Mountains*.

22. *Fun to Read Classics*, The Platt & Munk Co., Inc.

This series includes such titles as: *The Three Bears and Goldilocks, The Billy Goats Gruff, Pelle's New Suit, The Gingerbread Boy, The Tale of Peter Rabbit, The Little Red Hen and the Grain of Wheat, The Three Little Pigs*, and *Old Man Rabbit's Dinner Party*.

23. *Getting to Know Books Series*, Coward-McCann Inc.

This series for ages seven to twelve includes over twenty-five titles and

introduces the pupils to such lands as Alaska, Brazil, Chile, Germany, Greece, Hawaii, India, Israel, Japan, Spain, Korea, Lebanon, Liberia, Mexico, Panama, Philippines, Poland, Switzerland, Thailand, China, Turkey and Russia.

24. *Ginn Enchantment Readers*, Ginn & Company.

These are realistic and fanciful readers for the first three grades.

25. *Golden Rule Series*, American Book Company.

This 1961 series of readers, termed the modern McGuffey Readers, is for grades one through six and includes the following titles: *Open Windows*, *Open Doors*, *Open Roads*, *Paths to Follow*, *Frontiers to Explore*, and *Widening Horizons*. The series emphasizes moral and human relations themes.

26. *Grosset and Dunlap Wonder Books*, Grosset & Dunlap, Inc.

This series consists of:

1. *Wonder Books* (picture-story books for ages two to six) include titles such as *Mother Goose*, *The Little Dog Who Forgot How to Bark*, *Famous Fairy Tales*, *Bedtime Stories*, *The Little Train That Won a Medal*, *Peter Rabbit*, and *Storytime Favorites*.
2. *Easy Readers* (for ages six to eight) include titles such as: *Will You Come to My Party?* *Hurry Up*, *Slowpoke*, *The Secret Cat*, *Billy Brown Makes Something Grand*, and *Miss Polly's Animal School*.
3. *Read-Aloud Books* (age six to nine) include titles such as: *Kindergarten Stories*, *Nursery Tales*, *Mother Goose*, *Puppy Stories*, *Train Stories*, *Fairy Tales*, *Captain Kangaroo*, and *Peter Rabbit*.
4. *How and Why Wonder Books* (ages seven to twelve) include titles such as: *North America*, *Dinosaurs*, *Weather*, *Electricity*, *Stars*, *Our Earth*, *Human Body*, *Civil War*, *Mathematics*, *Chemistry*, and *Beginning Science*.

27. *Grosset and Dunlap Series*, Grosset & Dunlap, Inc.

The following series from preschool to junior-high level include the following:

1. *Signature Paperbacks*: These eighteen titles include such titles as: *Buffalo Bill*, *Robert E. Lee*, *Abraham Lincoln*, *Louis Pasteur*, *Joan of Arc*, *Crazy Horse*, *Annie Oakley*, and *Geronimo*.
2. *Anthologies for Children*: Anthologies offered include *Bedtime Treasury of Children's Stories*, *Children's Book of Bible Stories*, *Child's Treasury of Fairy Tales and Legends*, *Famous Christmas Stories*, *Favorite Stories to Read Aloud*, and *Illustrated Treasury of Children's Literature*.
3. *Little Pepper Books*: These twelve books for ages 9 to 13 include titles such as: *Adventures of Joel Pepper*, *Five Little Peppers Abroad*, *Five Little Peppers at School*, and *Five Little Peppers in the Little Brown House*.
4. *We-Were-There Books*: These 35 titles for ages 9 to 14 include such books as: *On the Oregon Trail*, *At the Battle of Gettysburg*, *With Byrd at the South Pole*, *At the Normandy Invasion*, *In the Klondike Gold Rush*, *With the Pony Express*, *At the Battle for Bataan*, *On the*

Chisholm Trail, At Pearl Harbor, With Richard the Lionhearted, and At the Driving of the Golden Spike.

5. *Picture Story Books*: This series includes such titles as: *Adventures of Pinocchio, Adventures of Peter Cottontail, Famous Heroes of the Old West, Lassie Come Home, The Littlest Angel, Snow White, A Visit to the Dentist, A Visit to the Doctor, and Terrytoons Playhouse.*
6. *Bobbsey Twins Series* (for ages 6-10).
7. *Hardy Boys Series* (for ages 10-14).
8. *Dana Girls Series* (for ages 9-14).
9. *Honey Bunch and Norman Series* (ages 6-10).
10. *Lone Ranger Series* (ages 11-15).
28. *Indians of the Americas Series*, Childrens Press, Inc.

This series on grade three level contains such titles as *Apaches, Cherokees, Iroquois, Navaho Land—Yesterday and Today, Dakotas, and Tohi—A Chumash Indian Boy.*
29. *The Jim Forest Readers*, Harr Wagner Publishing Company.

This series of supplementary readers contains the titles: *Jim Forest and Ranger Don, Jim Forest and the Bandits, Jim Forest and the Mystery Hunter, Jim Forest and Dead Man's Peak, Jim Forest and the Flood, and Jim Forest and Lone Wolf Gulch.* The reading level ranges from 1.7 to 3.1.
30. *The Junior Everyreader Series*, Webster Publishing Company.

These five books of third-grade reading level or below include such high-interest materials as *Robin Hood Stories, The Trojan War, and Greek and Roman Myths.*
31. *Kiddie Self-Readers*, Kenworthy Educational Service.

This series includes four small books for first graders with a controlled vocabulary. Titles available are: *A Coat for Gray-One, What Fox Did Not Know, Chief Mischief, and Mud Turtle and the Lake Maker.*
32. *Land and Peoples Series*, Holiday House.

This series of books deals with the peoples of many lands.
33. *Let's Find Out Series*, Watts Inc.

This series for grades one and two contains titles such as *Let's Find Out What's in the Sky, Let's Find Out What Electricity Does, Let's Find Out About School, and Let's Find Out What the Signs Say.*
34. *Life-Cycle Books*, Holiday House.

This series of books for grades three and four is designed for beginning study of living things.
35. *Little Wonder Books*, Charles E. Merrill Books, Inc.

These supplementary readers in science and social studies are for first through sixth grades.
36. *Lives to Remember Series*, G. P. Putnam's Sons.

This is a series of biographies generally for ages three through fourteen of such favorite heroes as Abraham Lincoln, Admiral Byrd, Albert Einstein, Daniel Webster, Dorothea Dix, Eleanor Roosevelt, George Washington

Carver, Helen Keller, Louis Pasteur, Marie Curie, St. Paul, Sister Elizabeth Kenny, Theodore Roosevelt, Thomas Edison, and the Wright Brothers.

37. *Morgan Bay Mystery Series*, Harr Wagner Publishing Company.

This series of four books includes *The Mystery of Morgan Castle*, *The Mystery of the Marble Angel*, *The Mystery of the Midnight Visitor*, and *The Mystery of the Missing Marlin*. The Series has a grade range of 2.3 to 3.5.

38. *Morrow Junior Books Series*, William Morrow & Co., Inc.

This series of over 100 titles for ages four to twelve includes such titles as: *Walter Raleigh*, *Volcano*, *Bonanza Girl*, *Winter Without Salt*, *Watch that Watch*, *Birds of the Crow Family*, *Oregon At Last*, *Indian Hunting*, *The Presidency*, *The Language of Animals*, and *The Sioux Indians*.

39. *Our America Readers*, Charles E. Merrill Books, Inc.

These are social studies readers for grade three through six.

40. *Our Animal Story Books*, D. C. Heath & Company.

This series includes ten preprimers with such titles as: *My Dog Laddie*, *Biddy and the Ducks*, *Frisky the Goat*, *The Little Crow*, *Little White Rabbit*, *Fun For Fidelia*, *Peanuts the Pony*, *Hundreds of Turkeys*, *Shadow the Cat*, and *Maybelle the Donkey*.

41. *Picture Books*, Random House.

These picture books for ages four and above include such titles as: *The Sneetches and Other Stories*, *The Grandma Moses Storybook*, *The Amazing Adventures of Dennis the Menace*, *Shirley Temple's Nursery Tales*, and *Poems to Read to the Very Young*.

42. *Pleasure Reading Series*, Garrard Press.

These stories on third-grade level portray such legends as Robinson Crusoe, Robin Hood, Arabian Nights, and the famous Greek heroes.

43. *Putnam's Sports Series*, G. P. Putnam's Sons.

This series contains numerous books on baseball and some on football.

44. *Read for Fun Series*, Webster Publishing Company.

This series of ten books for first, second, and third graders includes such titles as: *The Little Woman Who Forgot Everything*, *The Goat That Learned to Count*, *The Town That Forgot It Was Christmas*, and *Jimmy Potter Buys a Lollipop*.

45. *Reading Adventures Series*, Charles E. Merrill Books, Inc.

These are supplementary readers written for pupils in grades one through six.

46. *Reading Laboratory Books*, Childrens Press, Inc.

This series consists of five books on primary level and includes: *Cattail House*; *City Boy*, *Country Boy*; *Jolly Blue Boat*; *Number Men*; and *Once There Was a Kitten*.

47. *Reading Literature Series*, Bobbs-Merrill Company, Inc.

This series consists of six books for grades one through six: *Sunny and*

Gay, Foolish and Wise, Fun All Around, Shining Hours, Time for Adventure, and Beyond the Horizon.

48. *Reading Skilltexts*, Charles E. Merrill Books, Inc.

These are stories for grade levels one through six. The books are entitled *Bibs, Nicky, Uncle Funny Bunny, Uncle Ben, Tom Trott, and Pat the Pilot.*

49. *Read It Myself Books Series*, American Book Company.

This is a series of vocabulary-controlled stories for grades 1, 2, and 3: *The Wolf and the Seven Little Kids, Goldilocks and the Three Bears, Little Red Riding Hood, Jack and the Beanstalk, Peter and the Wolf, The Frog Prince, The Ugly Duckling, The Elves and the Shoemaker, Hansel and Gretel, Snow White and the Seven Dwarfs, The Golden Goose, and Rumpelstiltskin.*

50. *Sailor Jack Series*, Benefic Press.

This series consists of books about Sailor Jack ranging from preprimer to third-grade level.

51. *Science Explorer Series*, G. P. Putnam's Sons.

Designed generally for grades three through seven, this series has such titles as *Engines, Atoms and Power, Man and the Good Earth, and You, Yourself.*

52. *Science-Oriented Books*, Holiday House.

This is a series of books dealing with the physical sciences, social sciences, and living things.

53. *Sight Saving Books*, Albert Whitman & Company.

This is a series of over 100 books in eighteen and twenty-four point and manuscript type.

54. *The Story of Science Series*, Harvey House.

This series, designed for ages eight through fourteen, contains among other books entitled: *The Story of Rocks and Minerals, The Story of Shells, The Story of Planets, Space and Stars, The Story of Animals, The Story of Dinosaurs, The Story of Mathematics, and The Story of Life.*

55. *Time to Read Series*, J. B. Lippincott Co.

This series of eight readers ranges from preprimer to sixth-grade level. It contains the following titles: *Happy Ranch, Bucky's Friends, Making Friends, Skipping Along, Finding Favorites, Helping Others, Sailing Ahead, and Moving Forward.*

56. *Treasury of Literature Readers*, Charles E. Merrill Books, Inc.

Four volumes feature selections from 168 contemporary and classical story tellers. The stories are designed for grades three through six. The books are entitled: *Treat Shop, Magic Carpet, Enchanted Isles, and Adventure Lands.*

57. *The United States Books Series*, Albert Whitman & Company.

This series of books about all the States of our country is designed for ages eight to ten.

58. *Webster's New Practice Readers*, Webster Publishing Company.

These high interest readers are designed for grades two through eight.

59. *What Is It Series*, Benefic Press.

This series of 36 books contains such titles as: *What Is a Butterfly*, *What Is an Atom*, *What Is Chemistry*, *What Is Gravity*, and *What Is a Rocket*. The reading level of this series ranges from grade one through eight.

60. *Wilderness Mystery Series*, Harvey House.

This series contains books entitled: *Sand Dune Pony Mystery*, *Mystery at Rustlers' Fort*, *Indian Mummy Mystery*, and *Diamond Cave Mystery*. All books are written for ages eight through thirteen.

61. *The Wonder-Story Books*, Harper & Row, Publishers.

This series supplements the Alice and Jerry Readers. It teaches general reading skills. The titles offered from first to sixth grade include the following: *I Know A Story*, *It Happened One Day*, *After the Sun Sets*, *It Must Be Magic*, *They Were Brave and Bold*, and *These Are the Tales They Tell*.

62. *Wonder-Wonder Series*, Steck Company.

This series of books from preprimer to fifth grade level includes such titles as: *Secret Places*, *Every Day a Surprise*, *Did You Ever*, *Rainbow in the Sky*, and *Whatnot Tales*.

63. *Woodland Frolics Series*, Steck Company.

This series for grades one through eight contains such titles as: *Who Are You*, *Watch Me*, *Downy Duck Grows Up*, *Little Lost Bobo*, and *Chippy Chipmunk's Vacation*.

64. *The World Children Live In Series*, Silver Burdett Company.

This is a series of books for the primary years with such titles as: *Pets Around the World*, *Homes Around the World*, *Schools Around the World*, and *Work Around the World*.

INTERMEDIATE LEVEL MATERIALS

1. *Achieving Reading Skills Series*, Globe Book Company.

This series of graded readers from fourth- to seventh-grade level includes such titles as: *Ben-Hur*, *Treasure Island*, *Tom Sawyer*, *Robin Hood*, and *Ramona*.

2. *Apollo Editions*, William Morrow & Co., Inc.

This series of paperbacks offers among others the following new titles: *Stephen Foster*, *The Myth of Rome's Fall*, *No More War*, *Lewis and Clark*, *The German Generals Talk*, and *Electrons Go to Work*.

3. *Art Books for Children*, Faber and Faber.

This series includes such titles as: *The Story of Archaeology*, *The Story of Michelangelo*, *The Story of Painting*, *The Story of Sculpture*, *Your Book of Animal Drawing*, *Tales from the Ballet*, *Judy's and Andrew's Puppet Book*, and *Your Book of Weaving*.

4. *Challenge Book Series*, Coward-McCann, Inc.

This series for ages ten to fifteen includes such titles as: *Aluminum from Water*, *Cobras*, *Cows and Courage*, *Dust Bowl*, *Island in the Desert* (challenge of the Nile), *Jungle Oil* (oil in Venezuela), *People of the Snow* (Eskimos in Canada), and *The Rockets Red Glare* (Challenge of Outer Space).

5. *Childhood of Famous Americans Series*, Bobbs-Merrill Company, Inc.

This series of 122 readers for grades four and above includes the following titles: *Abe Lincoln: Frontier Boy*, *Albert Einstein: Boy Mathematician*, *Amelia Earhart: Kansas Girl*, *Annie Oakley: Little Sure Shot*, *Babe Ruth: Baseball Boy*, *Betsy Ross: Girl of Old Philadelphia*, *Buffalo Bill: Boy of the Plains*, *Davy Crockett: Young Rifleman*, *DeWitt Clinton: Boy Builder*, *Dolly Madison: Quaker Girl*, and *Eli Whitney: Boy Mechanic*.

6. *Easy Science Books*, Albert Whitman & Company.

This series of books for ages nine to fourteen includes titles such as the following: *Aluminum*, *Gold*, *Light of the World*, *Oil and Gas*, *Oysters*, *Pigeons*, *Salmon*, *Warships*, and *Wind, Water and Air*.

7. *Everygirls Library*, Lantern Press, Inc.

This series of books for girls aged eleven to fifteen includes titles such as: *Everygirls Adventure Stories*, *Everygirls Career Stories*, *Everygirls Detective Stories*, *Everygirls Horse Stories*, *Everygirls Romance Stories*, *Everygirls Nurse Stories*, etc.

8. *The Everyreader Series*, Webster Publishing Company.

This is a corrective reading program for middle and upper grade pupils. These eleven high-interest, low-difficulty readers (fourth grade difficulty) include such titles as: *The Gold Bug and Other Stories*, *Cases of Sherlock Holmes*, *Ivanhoe*, and *Ben Hur*.

9. *Find a Career Series*, G. P. Putnam's Sons.

Designed for grades five to ten, this series contains among others such titles as: *Find a Career in Photography*, *Find a Career in Electronics*, or *Find a Career in Medicine*.

10. *The First Books Series*, Watts, Inc.

This series generally for grades three and up is designed to give information and lead to understanding of certain basic subjects. The titles in this series include: *The First Book of Air*, *The First Book of Architecture*, *The First Book of the Human Senses*, *The First Book of Presidents*, *The First Book of South America*, *The First Book of the Star Spangled Banner*, and *The First Book of World War II*. The series contains numerous books in the areas of arts and recreation, science, communication, literature, language, and the social studies.

11. *The Harlow Indian Readers Series*, Harlow Publishing Corporation.

This series of books for grades four through six contains such titles as: *Boy of the Powhatans*, *Katska of the Seminoles*, *Kuni*, a Cherokee boy, and *Maiom*, a Cheyenne Indian girl.

12. *Landmark Books*, Random House.

This is a series of American and World history books for ages nine and up with such titles as *William Penn*, *Great American Fighter Pilots of*

World War II, The Copper Kings of Montana, The Rise and Fall of Adolf Hitler, Great Men of Medicine, Heroines of the Early West, and The Alaska Gold Rush.

13. *Let's Visit Series*, The John Day Company, Inc.

This is a series of books for ages nine to twelve that covers such countries as Ceylon, China, Formosa, India, Japan, Korea, Africa, Pakistan, Asia, and the West Indies.

14. *Maxton "Book About" Series*, Follett Publishing Company.

These upper-grade readers contain such titles as: *Alaska, Ballet, Bees and Wasps, Dogs, Jungle Animals, and Space Travel.*

15. *New Easy-to-Read Books*, Random House.

These scientific, adventure, and humorous stories for third grade and above cover such titles as: *The Story of Numbers, The Story of Electricity, Katie and the Sad Noise, The Snake that Went to School, No Room for a Dog, Rocks All Around Us, and Satellites in Outer Space.*

16. *New World Neighbors Series*, D. C. Heath & Company.

These supplementary readers for ages nine through thirteen are on such areas as Guatemala, the Caribbean, Bolivia, Hawaii, Argentina, Alaska, the Philippines, the Andes, Puerto Rico, and Brazil.

17. *Noble's Children's Classics*, Noble & Noble, Publishers, Inc.

This series includes such classics as: *Adventure of Huckleberry Finn, Adventures of Tom Sawyer, Gulliver's Travels, Heidi, Jack and Jill, Last of the Mohicans, Mother Goose, and Pinocchio.*

18. *Noble's New Literary Readers*, Noble & Noble, Publishers, Inc.

This series of readers for grades four to eight includes such titles as: *Holiday Reader, Daring Deeds, Juan's Adventures in Mexico, Texas Tales, and Literature for Today.*

19. *Pictured Geographies*, Albert Whitman & Company.

This series of geographies for ages nine to fourteen includes the following countries: Bahamas, Bermuda, Brazil, British Honduras, Dominican Republic, New Zealand, Virgin Islands, Colombia, Guiana, Newfoundland, Paraguay, Salvador, Bolivia, Ecuador, Greenland, Iceland, Peru, and Venezuela.

20. *Pioneer Series*, Benefic Press.

All five Pioneer Books are written for grades four through six. Titles included are: *Pioneer Buckaroo, Pioneer Sodbuster, Pioneer Tenderfoot, Pioneer Engineer, and Pioneer Pilgrim.*

21. *The Prince Valiant Series*, Hastings House.

This series, designed for grades four through nine, contains such titles as: *Prince Valiant in the Days of King Arthur, Prince Valiant Fights Attila the Hun, and Prince Valiant in the New World.*

22. *Raggedy Ann Series*, Bobbs-Merrill Company, Inc.

This series includes fourteen books for pupils in grades four and up. The titles include: *Raggedy Ann in the Magic Book, Raggedy Ann and the Golden Butterfly, Raggedy Ann and Andy and the Nice Fat Policeman,*

Raggedy Ann in the Deep Deep Woods, Raggedy Ann in Cookie Land, My Very Own Fairy Stories, Friendly Fairies, Raggedy Ann and the Camel with the Wrinkled Knees, Raggedy Ann's Wishing Pebble, Beloved Belindy, Raggedy Ann and Betsy Bonnet String, and Raggedy Ann in the Snow White Castle.

23. *Reading Today Series*, Bobbs-Merrill Company, Inc.

This series of readers, with controlled vocabulary, contains the following titles for the fourth to sixth grade level: *Stories from Near and Far, Stories of Now and Long Ago, and Stories Old and New.*

24. *Treasure Chest of Good Reading Series*, Bobbs-Merrill Company, Inc.

This series, designed for grades four through six, includes some thirty books for the classroom library.

25. *World Geography Readers*, Charles E. Merrill Books, Inc.

This is a series of supplementary geography readers for grades four through six.

26. *Young Heroes Library Series*, Lantern Press, Inc.

This series for ages nine to twelve includes such titles as: *Young Buckskin Spy, Young Circus Detective, Young Crow Raider, Young Hero of the Range, Young Visitor to Mars, Young Infield Rookie, Young Medicine Man, Young Ranch Detective, Young Sand Hills Cowboy, and Young Sioux Warrior.*

27. *Young Readers Bookshelf Series*, Lantern Press, Inc.

This series of books for children nine to twelve includes books of stories of adventure, animals, pioneers, baseball, and basketball; also detective, dog, horse, Indian, sports, mystery, nature, sports, science fiction, and wild life stories.

28. *Your Fair Land Series*, The John Day Company, Inc.

This is a series of novels for ages ten to fourteen on such landmarks as Acadia National Park, Zion National Park, Everglades National Park, Hawaii National Park, Mammoth Cave National Park, Grand Canyon National Park, and Yellowstone National Park.

29. *Zane Grey Series*, Walter J. Black, Inc.

This is a series of twenty-five Zane Grey adventure books with such titles as: *The Thundering Herd, Wildfire, Desert Gold, West of the Pecos, The Call of the Canyon, The Vanishing American, Western Union, Thunder Mountain, and Under the Tonto Rim.*

*Materials Specifically Designed to
Develop General and Special Comprehension Skills,
with Special Emphasis on Remediation and Correction*

Some materials are especially designed to develop the pupil's comprehension skills. In general, such materials are classified as basal series, supplementary readers series, and workbooks of one type or another

that advance the pupil in his understanding of what he reads. Among the supplementary readers the following are especially noteworthy:

1. *American Adventure Series*, Harper & Row, Publishers.
2. *Basic Vocabulary Series*, Garrard Press.
3. *Cowboy Sam Series*, Benefic Press.
4. *Junior Everyreader Series*, Webster Publishing Company.
5. *Webster's New Practice Readers*, Webster Publishing Company.

There is a fourth type of material that is designed for the slow learner and/or the retarded reader. These materials are high-interest materials with low reading level. Slow learners and retarded readers read on various levels and they experience different kinds of reading deficiencies that need differentiation in method and materials.

The following materials are illustrative of the various comprehension-improvement materials:

1. *Better Reading*, Globe Book Company.

These exercises in skimming for main ideas, in making inferences, in outlining, in detailed reading, and in study skills are for grades three to six; they may be used in grades seven to nine for remediation.

2. *Better Reading Books*, Science Research Associates.

This series consists of three books for grades five to ten and emphasizes rate and comprehension.

3. *Building Reading Skills*, McCormick-Mathers Publishing Company.

These books for grades one through six emphasize word recognition and word, phrase, and sentence meanings.

4. *Cowboy Sam Workbooks*, Beckley Cardy Company.

This series measures comprehension, vocabulary understanding, ability to follow directions, and reading for meaning. The following titles are offered: *Workbook for Cowboy Sam and Porky*, *Workbook for Cowboy Sam and Shorty*, *Workbook for Cowboy Sam and the Fair*, and *Workbook for Cowboy Sam and the Indians*. They range from primer to third grade level.

5. *Developmental Reading Series*, Educational Test Bureau.

These two books designed for pupils reading on the fifth and sixth grade level are accompanied by exercise materials.

6. *Developmental Reading Text-Workbooks*, Bobbs-Merrill Company, Inc.

This 1961 series of readers, paralleling basic readers, includes the following titles for grades one through six: *Ted and Polly*, *Up and Away*, *Animal Parade*, *Picnic Basket*, *Blazing New Trails*, *Flying High*, and *Shooting Stars*. Each book gives training in word attack methods, locational skills, comprehension skills, speed reading and skimming, oral reading, study skills, and content reading.

7. *Diagnostic Reading Workbook Series*, Charles E. Merrill Books, Inc.

These workbooks are for developmental and/or remedial programs. The materials are on a kindergarten to sixth-grade level and include: *Mother*

Goose, Nip, the Bear, Red Deer, Scottie, Adventure Trails, Exploring Today, and Looking Ahead.

8. *Diagnostic Tests and Remedial Exercises in Reading*, John Winston Company.

This consists of a variety of exercises on rate, phrasing, and comprehension for grades four and above.

9. *Dicto-Word Book*, O'Connor Remedial Services, Inc.

This book provides orientation in dictionary skills at the upper elementary level.

10. *Easy Readers*, Steck Company.

These picture books and easy readers are designed chiefly for kindergarten through grade five and contain such titles as: *A Book for Tongues, All the Sounds We Hear, Animal Tots, Cappy Cardinal, Creepy Caterpillar, The Donkey Sat Down, The Goat Who Ate the Flowers, Gee Whilikins, Rodeo, and Where is Cubby Bear?*

11. *E D L. Study Skills Library*, Educational Developmental Laboratories.

This series of materials is designed for grades four through nine and teaches interpretation, evaluation, organization, content area reading, and reference skills.

12. *Effective Reading*, Globe Book Company.

These exercises and materials are for grades four through eight.

13. *The Everyreader Series*, Webster Publishing Company.

This is a corrective reading program for middle and upper grade pupils. These eleven high-interest, low-difficulty readers (fourth grade difficulty) include such titles as: *The Gold Bug and Other Stories, Cases of Sherlock Holmes, Ivanhoe, and Ben Hur.*

14. *Gates-Pearson Practice Exercises in Reading*, Bureau of Publications.

These materials for grades three through six develop the ability to read for general significance, to predict outcomes, to understand directions, and to note details. For remedial readers they are useful in grades seven through nine.

15. *High-Interest Easy-to-Read Books*, Follett Publishing Company.

This series of readers for junior and senior high school students who do not read at grade level includes the following titles: *First Men in Space, First Adventure at Sea, The Indian Fighters, Mary Elizabeth and Mr. Lincoln, Great Moments in American History, Buried Gold, Ten Great Moments in Sports, An Adventure in Space, and Mystery of Broken Wheel Ranch.*

16. *Let's Read Series*, Holt, Rinehart & Winston, Inc.

This series consists of four books with high-interest and graded reading content.

17. *McCall-Crabbs Standard Test Lessons in Reading*, Bureau of Publications.

These paperback materials are designed for grades two to twelve and stress rate of reading and comprehension.

18. *My Read-N-Do-It Books*, O'Connor Reading Clinic Publishing Company.

These books are designed for grades one through three and develop the ability to follow written directions. Here are some sample exercises:



THE THREE LITTLE PIGS

One day the three little pigs went away. Each little pig wanted to build a house. One pig made a house of straw. One pig made a house of wood. One pig made a house of brick.

1. Color their trousers blue.
2. Put red coats on the little pigs.
3. Print straw-wood-bricks on this line.
4. Circle these three words up in the story.
5. Make two lines under the baby pig.
6. Draw a ring around each pocket on their coats.
7. Color the fence brown.
8. Draw some green grass along the fence.
9. Count the points and write the number.
10. Copy the name of this picture on this line.

house - straw - wood - under - points - story - their



THE THREE LITTLE KITTENS
MUFF, PUFF and SNUFF

The three little kittens are hungry. They cry, "Meow-meow, we want some milk."

1. Draw a big red bowl on the floor. Show the milk in the bowl.
2. Print meow in the circles close to each kitten.
3. Color the kitten on the box a pretty brown.
4. Color the other two as you wish.
5. Make a circle on each kitten's right front paw.
6. If you like kittens, put 3 Xs on this line.
7. Print their names on these lines _____ and _____



LITTLE MISS MUFFET

Little Miss Muffet sat on a toilet.

1. What two words sound alike?
2. Copy them on these lines.
3. Put a pretty blue dress on Miss Muffet.
4. Color the lines of the spider web black.
5. Draw a line from the cat to the spider.
6. If you think Miss Muffet was frightened, put an X on her spoon.
7. Print her name on this line.
8. Color the cat gray.
9. Count the legs on the spider.
10. Write the number on this line.

spider - frightened - legs - web - third - sound

19. *New Goals in Reading*, Steck Company.

This remedial worktext is designed especially for slow and retarded readers in the middle grades. While reading interesting stories, the pupil learns to obtain the facts, to see how words are formed, to unlock sounds in words, to use the dictionary, and to deal with phonics and structural analysis.

20. *New Practice Readers*, Webster Publishing Company.

These readers for grades two to eight are designed to improve general comprehension skills. The original *Practice Readers* are still available.

21. *Reading Aids Through the Grades*, Bureau of Publications.

The book offers three hundred activities for grades one through eight useful in remedial programs.

22. *Reader's Digest Reading Skill Builders*, Reader's Digest Services, Inc.

These readers are useful for independent reading or for corrective instruction in grades two through eight.

23. *Reading for Meaning Series*, J. B. Lippincott Co.

This series of workbooks for grades four through twelve is designed to improve comprehension and speed. Workbooks four and five concentrate on word meanings, total meaning, central thought, and detailed meanings. Workbooks six through twelve include organization and summarization.

24. *The Reading-Motivated Series*, Harr Wagner Publishing Company.

Three books, entitled, *The Secret of Lonesome Valley*, *Desert Treasure*, and *The Mysterious Swamp Rider*, comprise this series of books for grades six to nine. The vocabulary is of fourth-grade difficulty.

* Reprinted by permission of the O'Connor Reading Clinic Publishing Company.

25. *Reading Workbooks: We Go to School; We Like to Read Books I, II, III*, Harlow Publishing Corporation.

These four workbooks for grades one through three emphasize vocabulary development, word meanings, proper reading habits, and the teaching of following directions, identification of main ideas, and content comprehension.

26. *Remedial Reading Drills with Directions*, George Wahr Publishing Company.

27. Schmitt, Hall and McCreary Materials:

The following materials are offered:

1. *The New A B C Book*: This silent reader and workbook is designed for first graders. It provides an automatic test of the pupil's comprehension.
2. *First Steps in Reading*: This is a preprimer workbook that develops word and sentence mastery.
3. *The New Read and Do*: This book develops understanding and thought reading by requiring the pupil to read and then to do what the words say.

28. *SRA Reading for Understanding Laboratory*, Science Research Associates.

These four thousand selections are useful in grades three through twelve for developing critical comprehension. The paragraphs are graduated in difficulty.

29. *SRA Reading Laboratory*, Science Research Associates.

The laboratory consists of a series of graded and skilldevelopment materials for grades one through thirteen. The primary laboratory includes a phonics program. The elementary laboratory, generally used in grades four through six, consists of materials designed to develop comprehension, vocabulary, rate, and attention span.

30. *Study Exercises for Developing Reading Skills*, Laidlaw Brothers.

This series, designed for grades four through eight, includes fiction, geography, history, health, safety, nature study, and character development.

31. Wernon, Irving. *Annotated List of Books for Supplementary Reading* (Kindergarten and Senior High School), Materials for Learning, Inc.

This list also includes books on a kindergarten through eighth-grade level that are on a fourth- to tenth-grade interest level. Also listed are atlases, dictionaries, and encyclopedias.

32. *Wings for Reading*, D. C. Heath & Company.

This text, for grade six, emphasizes reading for main ideas and for details and promotes word study.

Materials Designed to Develop Word Identification and Recognition Skills

Numerous materials are available for the teaching of word attack skills. The materials listed below offer complete programs in phonetic and

structural analysis, including pronunciation, accent, and syllabication. They offer exercises in visual-motor coordination, the use of thinking and context in the identification of words, and in word, phrase, and sentence building. They emphasize perceptual skills, visual discrimination, and the development of left-to-right movement in reading.

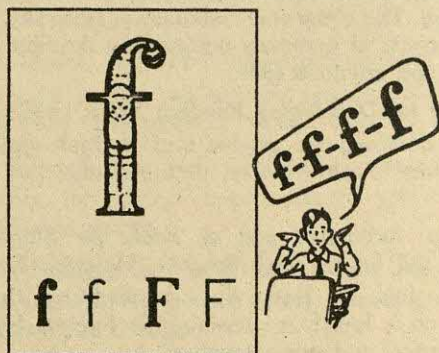
1. *A to Z Phonics Charts*, Educational Publishing Corporation.

This is a set of twelve charts teaching the basic elements of phonics. A manual, *A Guide to Teaching Phonics*, is provided to accompany the use of the charts.

2. *Beckley-Cardy Aids for Teaching Phonics*, Beckley-Cardy Company.

The following aids are available:

- (1) *Phonic Word Builder*
- (2) *Ideal Phonic Drill Cards*
- (3) *Doghouse Game—Fun with Phonics*
- (4) *Picture-Phonic Cards*
- (5) *Phonetic Word Drill Cards*
- (6) *A-B-C Game*
- (7) *Rainbow Word Builder*
- (8) *End-in-E Game* (Words ending in *e*)
- (9) *Quiet Pal Game* (Silent letters)
- (10) *Word Bingo*
- (11) *Embeco Phonetic Drill Cards*
- (12) *Phonics for Reading* (for slow readers)
- (13) *Phonic Talking Letters*



- (14) *Phonetic Quizmo*
- (15) *Make-a-Word Game*
- (16) *Phonic Rummy* (grades one through five)
- (17) *Phonetic Word Wheel* (grades two and three)
- (18) *Izzy Sight Vocabulary Cards*
- (19) *Word Rummy*
- (20) *Match Me* (reading readiness game)
- (21) *Learn to Read Workbooks*

These two workbooks, the first of which is for grades one, two,

and three and the second of which is for grades four and above, provide a program in phonics.

- (22) *Phonics Fun* (two workbooks for grades one and two)
- (23) *Building Words* (phonics workbook for first grade)
- (24) *Phonics Skilltexts* (phonics workbooks for grades one through five).

3. *Conquests in Reading*, grades four through six, Webster Publishing Company.

This workbook is designed to review structural and phonetic skills.

4. *Continental Basic Reading Series*, grades one through two. Continental Press, Inc.

This series includes the following materials:

- a. Reading Readiness Materials for Kindergarten and Grade One.
Rhyming, I and II
Visual Motor Skills, I and II
Beginning Sounds, I and II
Independent Activities, I and II
Thinking Skills, I and II
- b. *We Get Ready to Read* Preprimer
- c. *We Get Ready to Read* Primer
- d. *We Learn to Read* Grade One
- e. *We Learn to Read* Grade One
- f. *ABC Book* Grades One and Two
- g. *Reading-Thinking Skills* Grade Two

Many of these materials are illustrated in the readiness chapter.

5. *Cordts Phonetic Books*, Benefic Press.

Three books *I Can Read*, *Hear Me Read*, and *Reading's Easy* make up this set for levels one, two, and three.

6. *Duplicopy Reading Workbooks*, Beckley-Cardy Company.

There are three books: *First Grade Reading*, *Second Grade Reading*, and *Third Grade Reading*.

7. *Eye and Ear Fun*, Webster Publishing Company.

This is a phonics program for grades one through six. A separate book is provided for each of the first three grades; a fourth covers grades four through six.

8. *Graded Exercises in Pronunciation for Correction of Accent*, World Trade Academy Press.

These are graded exercises especially designed to help the foreign born to overcome pronunciation errors.

9. *Group Sounding Game*, Garrard Press.

This bingo-like game surveys the entire phonics program. It may be used on grades three to eight.

10. *Hammond's Phonics Charts and Materials*, C. S. Hammond & Company.

1. *Hammond's ABC Sounds Charts*
2. *Hammond's Consonantal Blends Charts*
3. *Hammond's Vowel Blends Charts*

4. *Hammond's Vowel Values Charts* (These introduce long and short vowels)
5. *My First Phonogram Book* (Simple Phonograms)
6. *My Second Phonogram Book* (Vowel Digraphs)
7. *My Third Phonogram Book* (Initial Digraphs)
8. *My Fourth Phonogram Book* (Terminal Digraphs)
11. *Happy Times with Sounds Series*, Allyn and Bacon, Inc.

This series consists of four books and provides a complete course in phonics.
12. *Hayes Beginning Reading Workbooks*, Beckley-Cardy Company.

These workbooks for kindergarten through grade two include the following: *Nursery Rhymes in Pictures*, *Seatwork for Beginners*, *Reading for Beginners*, *Reading*, grade one, *Reading*, grade two, and *Phonics and Reading*.
13. *Hayes Mastery Phonics Workbooks*, Beckley-Cardy Company.

This series consists of six books that give a complete coverage of the phonetic skills.
14. *Instant Word Pairs*, Learning Through Seeing, Inc.

These materials, designed for beginning readers at the primary levels or remedial readers at other levels, are actually a reading card game that teaches essential words.
15. *I Learn to Read*, Kenworthy Educational Service.

These two workbooks for grades one through four give a simplified course in phonics.
16. *Introduction of Diphthongs*, Anna Gillingham.
17. *Instructor Basic Phonics Series*, F. A. Owen Publishing Company.

This series contains five sets of materials: (1) Initial Consonant Sounds for grade one; (2) Vowel Sounds for grades one and two; (3) Advanced Consonants (blends) and Prepositions for grades two and three; (4) Compounds, Suffixes, Prefixes, and Syllables for two and three; and (5) Contractions and Advanced Phonic Forms for grades three through five.
18. *The Iroquois Phonics Series*, Iroquois Publishing Company.

This series consists of three text-workbooks entitled: *The Workshop*, for grade one, *Reading Trails*, for grade two, and *The Highroad to Reading* for grade three.
19. *Judy Master Word Set*, Judy Company.

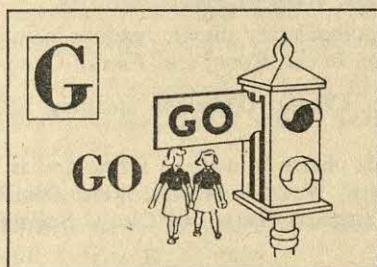
Each set consists of forty-eight cards designed to teach roots, prefixes, and meanings of words. These materials are for sixth grade and up.
20. *Kenworthy Phonetic Word Drill Cards*, Kenworthy Educational Service.

This is a series of three sets dealing with word families such as *all*, *eat*, *end*, *ake*, *ight*, etc.
21. *Kenworthy Teaching Aids*, Kenworthy Educational Service.

Among the aids offered are:

 1. *Word Family Fun* (word-attack game)

2. *Five First Steps and Pop Words* (cards to teach quiet recognitions of words and sounds)
3. *Word and Phrase Sentence Builder*
4. *Picture-Phonic Cards* (illustrations of the sounds of the letters and digraphs)



5. *Alphabet Flash Cards*
 6. *ABC Game*
 7. *Rainbow Word Builders*
 8. *Phonic Rummy*
 9. *Junior Phonic Rummy*
 10. *Perception Cards*
 11. *Word Builders* (letter cards)
 12. *Word Blends*
 13. *Word Prefixes*
 14. *Word Suffixes*
22. *Let's Listen Cards*, Steck Company.
- This is a set of cards for kindergarten and grade one to be used in teaching the initial consonant.
23. *Match-Word*, Benton Review Publishing Company.
- Designed for primer and first grade, this game requires the child to match words.
24. *Milton Bradley Reading Aids*, Milton Bradley Company.
- These include:
1. *Phonetic Word Builder*
 2. *Economo Word Builder*
 3. *Picture Word Builder*
 4. *Economo Sentence Builder*
 5. *Anagrams*
 6. *Phonetic Drill Cards*
 7. *Word and Sentence Builder*
 8. *Picture Words for Beginners*
 9. *See and Say Consonant Game*
 10. *See and Say Vowel Game*
 11. *Alphabet-Picture Flash Card*
 12. *Flash Words*
 13. *Phonetic Quizmo*

14. *Phonetic Word Wheel*15. *Picture Word Lotto*25. *My Word Study Book*, Educational Service, Inc.

This series of six books, one for each grade, emphasizes phonetic sounds, syllabication, likenesses and differences, prefixes, and suffixes.

26. *New Phonic Readers*, Wenkart Phonic Readers.

These three supplementary phonic readers include the following titles: *At A Zoo*, *The Man in the Moon*, and *Fun at Camp*.

27. *O'Connor Roll-Up Charts*, O'Connor Reading Clinic Publishing Company, Inc.

This series of six charts is made of fabric and is fastened on a wooden roller. The titles are: *Word Reversals*, *Word Discrimination*, *Silent Final E*, *Two Vowels Together*, *Open and Closed Syllables*, and *Synonyms for Said*.

28. *Phonetic Keys to Reading*, Economy Company.

This is a basal series for grades one through four emphasizing phonics from the beginning. The series consists of *Tag*, the preprimer; *Dot and Jim*, the primer; *All Around*, the first reader; *Through Happy Hours*, *As Days Go By*, and *Happy Hours*, the second grade readers; *Along New Ways*, *Wide Doors Open*, and *New Ways*, the third-grade readers; and *Down Right Roads* and *Tales to Enjoy*, the fourth-grade readers. The series is accompanied by teacher manuals, phonetic cards and charts, and picture cards. The fourth-grade program is termed *Keys to Independence in Reading*.

29. *Phonic Rummy Games*, Phonovisual Products, Inc.

These are five different games for beginners through grade four.

30. *Phonics and Word Recognition Cards*, Charles E. Merrill Books, Inc.

These consist of two sets of picture cards designed to develop a vocabulary.

31. *Phonics, Book I and II*, Harlow Publishing Corporation.

These two workbooks for grades one and two stress visual and auditory discrimination.

32. *Phonics for Reading*, Kenworthy Educational Service.

This phonic kit includes the *Doghouse Game* and the *Phonetic Word Drill Cards*.

33. *Phonics Skilltexts*, Charles E. Merrill Books, Inc.

There are four separate books designed for grades one through five.

34. *Phonics We Use*, Lyons and Carnahan.

This is a phonics program for grades one through eight.

35. *Phono-Word Wheels*, Steck Company.

These five sets of word wheels teach a basic vocabulary and are usable on the second to sixth grade level. The more-advanced wheels emphasize initial sounds, prefixes, and suffixes.

36. *Phonovisual Consonant Chart*, Phonovisual Products, Inc.

This chart contains twenty-six consonant sounds and eight subspellings. A *Consonant Workbook* is also available.

37. *Phonovisual Method Book*, Phonovisual Products, Inc.

This book provides step-by-step procedures in teaching consonants and vowels in kindergarten, primary, and remedial programs.

38. *Phonovisual Skill Builders*, Phonovisual Products, Inc.

These are eighty-four cards useful in teaching consonants and vowels.

39. *Phonovisual Vowel Chart*, Phonovisual Products, Inc.

This chart teaches seventeen vowel sounds and twenty-one subspellings. A *Vowel Workbook* is available.

40. *Phrase-O-Games*, Steck Company.

These three sets of cards are designed to teach basic phrases and are usable on the second to sixth grade level.

41. *Picto-Lotto Cards and Picto-Word Flash Cards*, F. A. Owen Publishing Company.

These two sets of materials are useful in building a vocabulary. They are designed for kindergarten and the primary grades.

42. *Practice Book in Phrase Reading*, Steck Company.

43. *Reading Essentials Series*, Steck Company.

This series consists of a series of materials for grades one through eight and includes such titles as *Come and Play*, *Fun Time*, *Play Time*, *Work Time*, *New Goals in Reading*, etc. It offers training in essential reading skills, phonics and structural analysis skills, and vocabulary.

44. *Reading Essentials Teaching Aids*, Steck Company.

These materials for grades one through three include for grade one: seven family picture cards, twenty pictorial *Rhyming-Sound Cards*, thirty-three pictorial *Auditory Initial-Consonant Cards*, forty pictorial *Visual-Auditory Initial-Consonant Cards*, thirty-two *Sentence Parts Cards*, fifty-six *Word and Initial-Consonant Cards*, forty *Final-Consonant Word Cards* and forty-six *Little Words in Big Words Cards*. Similar materials but on a higher level are provided for grades two and three.

45. *Reading Preparation Books*, Beckley Cardy Company.

These two books develop left-to-right eye movements and motor coordination.

46. *Reading with Phonics*, J. B. Lippincott Co.

This offers a total phonics program. It is accompanied by three *Workbooks*, A, B, C, and with *Phonetic Picture Cards*. The workbooks are *Sounds, Letters, and Words*, *More Letters and Words* and *Skills with Sounds and Words*.

47. Remedial Educational Center *Phonic Materials*, Remedial Education Center.

These materials include:

1. *Go Fish*—a consonant game

2. *Go Fish*—a consonant-blend game
3. *Vowel Dominoes*
4. *Short Vowel Drill*
5. *Suggested Procedures for Teaching Syllabication for Pronunciation*

48. *Seatwork Books*, Benton Review Publishing Company.

This series of five books is designed to develop a basic vocabulary. The books are entitled: *Let's Get Started*, *Fun with Words and Pictures*, *Fun With Words—Grade I*, *Fun with Words—Grade II*, and *More Fun with Words—Grade III*.

49. *The Sound Way Series*, Benton Review Publishing Company.

These two books develop the pupils' phonic skills.

50. *Sounds We Use*, Wilcox and Follett.

These three books are useful in grades one through three.

51. *Syllaboscope Materials*, Wordcrafters Guild.

This set of materials consists of: *Teacher and Student Syllaboscopes*; *Christie Word Set*: This contains 60 words of highest frequency in six intermediate reader series; *220 Basic Sight Words*; *Student Word Set*; *Guideword Dictionary*, and *Syllabication Principles*.

The materials are useful in teaching vocabulary, spelling, principles of word analysis, and syllabication. Using sliding panels, the pupil isolates in turn blends, affixes, and syllables from the total word so that he can study them individually and thus arrive at the total word.

52. *Syllable Concept*, Anna Gillingham.

These materials consist of sixty-four cards designed for grades three and up and develop the syllabication skill.

53. *Teacher's Phonics Skill Builders*, Mathers Publishing Company.

These word-attack skill builders consist of a series of cards each with a drawing underneath of which is the word that names the picture.

54. *Time for Phonics*, Webster Publishing Company.

This is a phonics program for kindergarten through grade three.

55. *UNO—A Phonics Game*, Kenworthy Educational Service.

Ninety cards provide a complete but streamlined course in phonics. On the back of each card is a list of words illustrating the same phonetic element as is on the front of the card.

56. *Webster Word Wheels*, Webster Publishing Company.

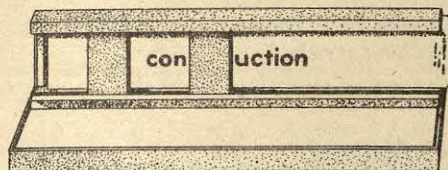
These sixty-three wheels help teach consonant blends, prefixes, suffixes, and word blending.

57. *We Read, Write, Speak, and Spell Series*, Educational Test Bureau.

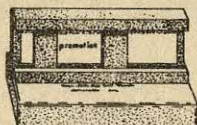
These three books, designed for pupils in grades one through five who do not learn to read by usual methods, emphasize visual and auditory discrimination.

58. *What They Say*, Webster Publishing Company.

This is a series of twenty-five cards useful in teaching letter recognition, consonant sounds, and consonant blends.



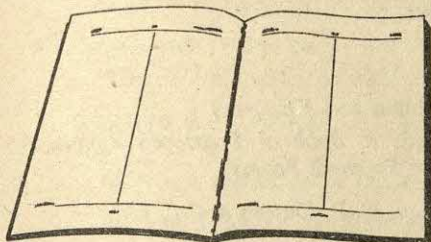
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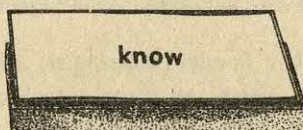
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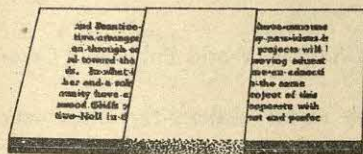
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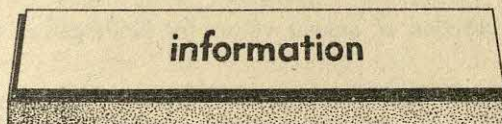
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E



G



H

Syllaboscope *

59. *What the Letters Say*, Garrard Press.

This game teaches the beginner that a letter has both a name and a sound. Only one sound for each letter is learned.

60. *Word Analysis Charts*, Webster Publishing Company.

These five charts deal with consonant sounds, vowels, speech blends, vowel digraphs, prefixes, and syllabication.

61. *Wordland Series*, Continental Press.

This is a complete phonics program for grades one through five with the following titles: *Fun in Wordland*, grade 1; *A Trip Through Wordland*,

* Courtesy of the Wordcrafters Guild, Washington, D.C.

grade 2; *Adventures in Wordland*, grade 3; *A Flight through Wordland*, grade 4; and *Through Space to Wordland*, grade 5.

Miscellaneous Materials

The materials in this section include: collections of poems, fairy tales, riddles, rhymes, and games; magazines; plays and encyclopedias. Picture dictionaries were previously listed in Chapter 7.

COLLECTIONS OF POEMS, FAIRY TALES, RIDDLES, RHYMES, AND GAMES

1. *The Bowlin Anthologies*, Albert Whitman and Company

There are three anthologies offered: *A Book of Treasured Poems*, *A Book of Living Poems*, and *A Book of Personal Poems*.

2. Carey, M. C., *Fairy Tales of Long Ago*, E. P. Dutton & Co., Inc.

3. Cerf, Bennett, *Book of Riddles*, Random House.

This is a list of riddles for beginning readers.

4. Cole, William, ed., *Humorous Poetry for Children*, World Publishing Company, 1955.

This book contains over 200 poems by eighty authors for elementary school children.

5. Cole, William, ed., *I Went to the Animal Fair*, World Publishing Company, 1958.

This is a collection of animal verses for kindergarten through grade three.

6. Cole, William, ed., *Poems of Magic and Spells*, World Publishing Company, 1960.

This is a collection of ninety poems for grades four through eight.

7. Cole, William, ed., *Poems for Seasons and Celebrations*, World Publishing Company, 1957.

This book contains more than 140 poems for the four seasons and holidays to be used at fifth grade and above.

8. Cole, William, ed., *Story Poems New and Old*, World Publishing Company, 1957.

This is a collection of stories narrated in verse for all grades.

9. *Elementary Crossword Puzzles and Seat Games*, Educational Publishing Corporation.

10. *Games for Boys and Girls*, Abingdon Press.

This manual contains games for children between the ages of seven and twelve.

11. Grahame, Kenneth, *Cambridge Book of Poetry for Children*, G. P. Putnam's Sons.
This is an anthology of poems designed for grade six.
12. Green, Roger L., *Modern Fairy Tales*, E. P. Dutton & Co., Inc.
13. Green, Roger L., *Tales of Make-Believe*, E. P. Dutton & Co., Inc.
14. Hazeltine, Alice I., *Hero Tales from Many Lands*, Abingdon Press.
This book contains thirty selections from major folk epics such as Beowulf, King Arthur, etc.
15. Hazeltine, Alice I., *Children's Stories to Read or Tell*, Abingdon Press.
This is a collection of thirty-seven stories from children's classics.
16. Hutchinson, Veronica S., *Candlelight Stories*, G. P. Putnam's Sons.
This is a collection of thirteen fairy tales for grades three to five.
17. Hutchinson, Veronica S., *Chimney Corner Fairy Tales*, G. P. Putnam's Sons.
This is a collection of thirteen fairy tales for grades three to five.
18. *Jokes and Riddles*, The Platt & Munk Co., Inc.
19. *1001 Riddles*, The Platt & Munk Co., Inc.
20. *One Thousand Poems for Children*, Macrae Smith Co.
21. *Phonovisual Game Book*, Phonovisual Products, Inc., 1960.
This book contains directions for forty-five games.
22. *Poems for Children*, Educational Publishing Corporation.
This is a collection of verses for both primary and intermediate level. Poems are grouped under Halloween, Thanksgiving, Christmas, Winter, Spring, and Special Days.
23. *Poems for Red Letter Days*, Macrae Smith Co.
This is a compilation of 275 poems and lyrics for various songs for ages eight to twelve.
24. Russell, David H., and Karp, Etta E., *Reading Aids Through the Grades*, Columbia University Press, New York, 1951.
25. *Simple Games for Primary Grades*, Educational Publishing Corporation.
26. Starr, John W., *Selected Reading Games and Devices for the Primary Grades*, University of Oregon, 1958.
27. Starr, John W., *Selected Reading Games and Devices for the Intermediate Grades*, University of Oregon, 1958.
28. Wagner, Guy and Hosier, Max, *Reading Games*, Educational Publishing Corporation, 1961.
This book contains 154 games designed to strengthen reading skills.
29. Wagner, Guy, Hosier, Max, and Blackman, Mildred, *Listening Games*, Educational Publishing Corporation.
These games are for kindergarten through grade eight.
30. Watson, A. H., *Nursery Rhymes*, E. P. Dutton & Co., Inc.

MAGAZINES

1. *Books for Young Readers Magazine*, 18288 Prevost Avenue, Detroit 35.
Books for Young Readers reviews the latest and best books from kindergarten through junior high school.
2. *Booklist and Subscription Books Bulletin, A Guide to Current Books*, American Library Association.
This is published twice a month September through July and once in August.
3. *Bulletin of the Center for Children's Books*, University of Chicago Press.
This bulletin is published monthly.
4. Cundiff, Ruby E., *101 Magazines for Schools, Grades One Through Twelve*, Tennessee Book Company, Nashville, 1959.
5. *Dobler International List of Periodicals for Boys and Girls*, Muriel Fuller, P. O. Box 193, Grand Central Station, New York 17.
This is a listing of some 350 magazines in various languages.
6. *Grade Teacher*, Educational Publishing Corporation, Darien, Connecticut.
This magazine is for the teacher. Ten issues appear yearly.
7. *Guide to Children's Magazines, Newspapers, Reference Books*, Association for Childhood Education International.
This is an annotated list of the materials described in the title.
8. *Highlights*, Highlights, Inc.
This magazine comes monthly September through May and in July and offers stories, puzzles, and creative activities for ages two to twelve.
9. *Horn Book Magazine*, Horn Book, Inc.
This is a bimonthly magazine for children and adolescents.
10. *Instructor Subscription Agency*, Dansville, New York.
This agency provides:
 1. *The Instructor*
 2. *American Girl*
 3. *Boy's Life*
 4. *Calling All Girls*
 5. *Child Life*
 6. *Children's Digest*
 7. *Children's Playmate*
 8. *Humpty Dumpty*
 9. *Jack and Jill*
11. *Jack and Jill*, Curtis Publishing Company.
This magazine is for ages six to twelve.
12. *Junior Bookshelf*, Tower Wood, Windermere, Westmorland, England.
This publication is similar to *Horn Book* and appears six times a year.

13. *Library Journal*, R. R. Bowker Company.

Published bimonthly (monthly in July and August) this magazine is devoted to reviewing fictional, nonfictional, and children's books.

14. *Parent's Magazines Publications*, Inc.

This organization offers the following magazines:

- (1) *Humpty Dumpty's Magazine* for little children, kindergarten, first, second, and third grades.
- (2) *Children's Digest*, fourth, fifth, and sixth grades.
- (3) *Calling All Girls*, fifth, sixth, and seventh grades.

15. *Plays*, Plays Inc.

This drama magazine for young people offering royalty-free plays is published monthly, October through May.

16. *School Library Journal* (formerly *Junior Libraries*), R. R. Bowker Company.

Published monthly September through May, this magazine reviews children's books.

PLAYS

1. Burrack, A. S., *Four-Star Plays for Boys*, Plays Inc.

This collection of fifteen one-act plays for boys with a variety of characters (cowboys, clowns, pirates, space men, and teen-agers) is designed for lower-grade pupils through senior high.

2. Durrell, Donald D. and Crossley, B. Alice, *Thirty Plays for Classroom Reading: A New Approach to the Reading Program in the Intermediate Grades*, Plays Inc., 1957.3. Fisher, Aileen, *Christmas Plays and Programs*, Plays Inc., 1960.

This is a collection of one-act plays for lower grades.

4. Fisher, Aileen, *Health and Safety Plays and Programs*, Plays Inc.

This is a collection of plays, skits, readings, songs, and recitations for lower and middle grades.

5. Fisher, Aileen and Rabe, Olive, *Patriotic Plays and Programs*, Plays Inc.

This collection consists of twenty one-act plays, seven playlets, eleven group readings, five spelldowns, and fourteen recitations for lower grades through junior high.

6. Fisher, Aileen and Rabe, Olive, *United Nations Plays and Programs*, Plays Inc.

This offers fifteen plays, fourteen recitations, four playlets, twelve group readings, seven songs, and prayers and toasts for lower grades through high school.

7. *It's Time to Give a Play*, Macrae Smith Co.

This contains twenty-six plays, some for handicapped children, for ages six to ten.

8. Kamerman, Sylvia E., *Children's Plays from Favorite Stories*, Plays Inc.
This collection contains fifty short plays of such stories as: *Snow White*, *Cinderella*, *The Three Little Kittens*, *Red Riding Hood*, *Rapunzel*, and *Pandora's Box*.
9. Miller, Helen Louise, *First Plays for Children: A Collection of Plays for the Youngest Players*, Plays Inc., 1960.
10. Miller, Helen Louise, *Gold Medal Plays for Holidays*, Plays Inc.
This is a collection of thirty dramas for special occasions.
11. Newman, Deborah, *Holiday Plays for Little Players*, Plays Inc.
This is a collection of thirty-three plays for the lower grades.
12. *New Plays for Red Letter Days*, Macrae Smith Co.
These plays are for holidays and for ages nine to thirteen.
13. Okun, Lillian, *Let's Listen to a Story*, H. W. Wilson Company, 1959.
These are radio adaptations of well-known children's stories.
14. Phelps, Edith M., ed., *Book and Library Plays*, H. W. Wilson Co., 1941.
This compilation contains plays chiefly for high school use, but also some for the elementary school.
15. West, Dorothy H. and Peake, Dorothy M., *Play Index*, H. W. Wilson Co., 1953.
16. *Year 'Round Plays for Primary Grades*, Educational Publishing Corporation.
17. *Year 'Round Plays for Intermediate Grades*, Educational Publishing Corporation.

ENCYCLOPEDIAS

1. *Boys and Girls Encyclopedia*, C. S. Hammond and Company.
This is a picture encyclopedia.
2. *Britannica Junior Encyclopaedia*, Encyclopaedia Britannica.
3. *My First Picture Encyclopedia*, Grosset & Dunlap, Inc.
4. *The Children's Hour*, Spencer Press Inc.
This sixteen-volume encyclopedia of stories includes more than one thousand stories and poems.

Audio-Visual Materials

The basis for all learning ultimately is experience, either first-hand or vicarious. The most common vicarious experience is that of verbal communication. However, few teachers today would resort entirely to a lecture process in teaching or in communicating knowledge. Teachers today are vitally interested in the modern media of communication.

They use audio-visual materials for introducing a unit, for motivating pupils—in general, they use audio-visual materials whenever these facilitate understanding and learning.

Audio-visual materials are used in reading to prepare the pupil for reading, to get his attention, to develop background, to introduce and illustrate new words, to extend interests, and to extend skills and abilities. They may be used for research or for review.

Among the materials listed in this section are recordings, films, correlated records, textfilms, and audio-books. They cover such areas as readiness, word recognition, comprehension, and critical reading. There are materials directed toward improvement in aural imagery, rhyming, listening, phonics, enunciation, and articulation. Some materials emphasize such study-type reading skills as outlining, map and graph reading, and note-making. And some materials emphasize choral speaking, appreciation for literature, dictionary skills, library skills, and rate of reading.

1. *Alice and Jerry Textfilm Program*, Harper & Row, Publishers.

These films accompany all the Alice and Jerry readers, grades one through six. Each 35 mm. film consists of forty to fifty frames.

2. *Alice and Jerry Textfilms*, Society for Visual Education, Inc.

This set of textfilms accompanies the *Alice and Jerry Reading Series*. Textfilms are available for grades one through five.

3. *Animal Friends Series*, Society for Visual Education.

This is a series of stories both in filmstrip and record form designed to develop reading readiness. The titles include: *Hide-Away Puppy*, *Chester, the Little Pony*, *Little Mailman of Bayberry Lane* and *Mr. Bear's House*.

4. *Audio-Education, Inc. Recordings*, American Book Company.

The following subjects are available: *Listen and Do*, *How You Talk*, *Rhyme Time*, and *Aural Imagery*.

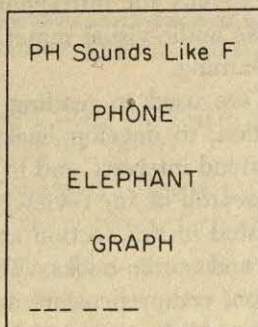
5. *Audio-Visual Charts*, O'Connor Reading Clinic Publishing Company.

For primary and upper elementary grades these charts teach homophonic and homogeneous words. Cards emphasize such aspects as the *f* sound of *ph*, (see sample card) three sounds for *d*, the sound of *gh*, and the *z* sound of *s*.

6. *Basic Primary Phonics Filmstrips Series*, Society for Visual Education.

This series includes:

1. Initial Consonant Sounds—b, d, p (19 frames)
2. Initial Consonant Sounds—h, n, f, k (23 frames)
3. Initial Consonant Sounds—m, n, t, j (24 frames)
4. Initial Consonant Sounds—r, s, v, w (25 frames)
5. Initial Consonant Sounds—c, g, y, q (30 frames)
6. L and W Blends (25 frames)
7. R Blends (25 frames)
8. S Blends (25 frames)
9. Two-Letter Sounds (25 frames)



10. Two and Three-Letter Combinations (25 frames)
 11. Rhyming Words and Final Consonant Sounds (25 frames)
 12. Short Vowel Sounds (24 frames)
 13. Long Vowel Sounds (24 frames)
 14. Y Vowel Sounds (26 frames)
 15. Two-Letter Vowels (25 frames)
 16. Two-Letter Combinations (oo, ow, ou, oi, oy, aw, au (29 frames)
 17. Vowels controlled by R (28 frames)
7. *Children's Series 10"*, Folkways Records.
- This is a series of records for young children with such titles as *American Folk Songs for Children*, *Songs to Grow On*, *Birds, Beasts, Bugs, and Little Fishes*, *Camp Songs*, *Skip Rope Games*, *Animal Folksongs for Children*, *The Laundry Story and the Bakery Story*, *Folk Tales from West Africa*, *Klondike Gold Rush*, *The Real Story of Davy Crockett*, *The Pueblo Indians*, and *Rhythms for Children*.
8. *Children's Series 12"*, Folkways Records.
- This is a collection of records with such titles as *Nursery Rhymes*, *Christmas Songs of Many Lands*, and *Children's Stories and Songs*.
9. *Choral Speaking and Speech Improvement*, Educational Publishing Corporation.
- This book contains 150 choral speaking poems and verses, useful at the elementary level.
10. *Choral Speaking Arrangements for the Lower Grades*, Expression Company.
- Refrain, two-part, and line-a-child arrangements of poems for grades one through three are offered. Also available is *Choral Speaking Arrangements for the Upper Grades*.
11. *Coronet Films*, Coronet Films Inc.
1. "Fun with Speech Sounds"—covers the vowels and consonants *p*, *m*, *l*, *r*, *th*, and *ch* and is designed for the primary level.
 2. "Do Words Ever Fool You?"—deals with the problems of critical reading (intermediate grades).

3. "Listen Well, Learn Well"—deals with listening development (intermediate grades).
 4. "Making Sense with Outlines"—teaches outlining (intermediate level).
 5. "We Discover the Dictionary"—intermediate level.
 6. "Who Makes Words?"—word origins—intermediate level.
 7. "Maps are Fun"—how to make and read maps—intermediate level.
 8. "How to Read A Book"—junior high.
 9. "How to Remember"—junior high.
 10. "How to Study"—junior high.
 11. "Importance of Making Notes"—junior high.
 12. "Improve Your Study Habits"—junior high.
 13. "Know Your Library"—junior high.
 14. "Library Organization"—junior high.
12. *CRS Audio-Visual Catalog*, Children's Reading Service, Brooklyn.
13. *EDL Filmstrips*, Educational Developmental Laboratories.
- Filmstrips are available from readiness to adult levels. Readiness films are designed to develop concentration, observation, retention, discrimination, and logical reasoning while teaching sixty words. In the first grade the pupil reads stories and adds 318 new words.
14. *Educational Film Guide*, H. W. Wilson Co.
15. *Educational Service Inc. Ten Recorded Lessons*.
- These ten 78 R.P.M. records assist in the teaching of phonics.
16. *Educators Guide to Free Films, Educators Guide to Free Filmstrips, and Educators Guide to Free Tapes, Scripts and Transcriptions*, *Educators Progress Service*.
17. *Films for Children*, Educational Film Library Association, Inc.
- This is an annotated list of 205 16 mm. films for children.
18. *Filmstrip Guide*, H. W. Wilson Co.
19. *Filmstrips for Practice in Phonetic Skills*, Scott, Foresman & Co.
20. *Folk Tale Records*, American Library Association.
21. *Free Loan Motion Pictures*, Association Films Inc.
- This catalog lists numerous free films useful in teaching of the communication skills.
22. *Graded Word Phrases*, Society for Visual Education, Inc.
- These word phrases are designed for kindergarten through grade six. In all, there are 57 filmstrips. The phrases are useful in developing recognition skills, speed, and comprehension skills.
23. *Guides to Newer Educational Media: Films, Filmstrips, Phono Records, Radio, Slides, Television*, American Library Association, 1961.
- This annotated handbook lists catalogs, services, organizations, and periodicals that deal with newer mass media.

24. *Introduction to Grammar Series*, Bailey Films, Inc.

There are three films ("Nouns, Pronouns, and Adjectives"; Sentences," and "Punctuation") in this series of elementary films.

25. *It's Fun to Find Out Film-Story Books*, D. C. Heath and Company.

Each 32 page book is correlated with a similar motion picture story by Encyclopaedia Britannica. The materials are designed for ages six to nine. The books have the following titles: *Three Little Kittens*, *Gray Squirrel*, *Shep the Farm Dog*, *Farm Animals*, *The Fireman*, *The Mailman*, *The Food Store*, *A Day at the Fair*, *Billy and Nanny*, *The Twin Goats*, *Elephants*, *Circus Day in our Town*, *Airport*, *Tugboats*, *The Bus Driver*, *A Visit With Cowboys*, and *The Doctor*.

26. *Keys to Reading*, C-B Educational Films, Inc.

This is a series of three films entitled "Words," "Phrases and Sentences," and "Paragraphs" of about 10 minutes in length.

27. *Landmark Enrichment Records and Filmstrips*, Enrichment Teaching Materials.

Titles such as "The Swamp Fox of the Revolution," "Custer's Last Stand," "The California Gold Rush," and "Guadalcanal Diary" are offered.

28. *Language of Graphs Film*, Coronet Films.

29. Leestma, Robert. *Audio-Visual Materials for Teaching Reading*, Slater's Book Store, Ann Arbor, Michigan, 1954

30. *Let's Read Poetry*, Bailey Films, Inc.

This film stimulates interest in poetry and emphasizes the advantages of reading slowly, of thinking about what is read, and of observing punctuation.

31. *Listen and Learn with Phonics Records*, Beckley-Cardy Company.

Four phonics books, three 78 rpm. records, Turn-a-Word Wheel, and Word Chart are the materials in this program. The set is usable in conjunction with any primers and readers.

32. *Listen and Read Program*, Educational Developmental Laboratories.

This series of thirty tapes and workbook helps the pupil to listen better, to understand words, sentences, and paragraphs, and introduces him to intensive, study-type reading, to critical reading, and to listening. The materials are on a junior high school level.

33. *Listening Time Records*, Webster Publishing Company.

Three albums of four records each tell such stories as "Leonard the Lion," "Ready Rooster," "The Dream Fence," and "Children Who Listened for Sounds."

34. *Map Interpretation Charts*, Denoyer-Geppert Company.

This is a series of five colored charts 54" x 44" designed to teach map reading and globe understanding.

35. *Maps and Their Uses*, film, Coronet Films.

36. *Map Symbols, Dots and Lines*, 60 frames, Rand McNally & Co.

37. *Once Upon a Time: Fairy Tales for Dramatization*, American Book Company.

This record is designed to develop listening skills through four classic fairy tales and offers readiness for "Pathways to Phonic Skills."

38. *Pathways to Phonic Skills*, Audio-Education, Inc.

These records, six in all, are correlated with the *Betts Basic Readers* and are designed for grades one through three.

39. *Pathways to Reading*, C-B Educational Films, Inc.

This is a series of films, on fourth-grade level, on the following topics: "Why Read," "What Did you Read?," "How to Read," "Was it Worth Reading," and "What's in a Book?"

40. Pepe, Thomas J. *Free and Inexpensive Educational Aids*, Dover Publications, Inc.

This is an annotated list of over 1500 books, films, charts, pamphlets, and slides.

41. *Phonics: A Key to Better Reading*, Society for Visual Education, Inc.

42. *Phonograph Records for Classroom and Library*, Educational Record Sales.

43. *Phonovisual Consonant Flipstrips*, Phonovisual Products, Inc.

There are 52 strips—two complete sets of the 26 consonants and corresponding pictures—in this set.

44. *Phonovisual Record of Sounds*, Phonovisual Products, Inc.

This record is designed for the teacher and teaches how to make the sounds properly.

45. *Picture Book Parade Motion Pictures, Filmstrips, and Records*, Weston Woods Studios.

46. *Poetry Time and Sounds Around Us*, Scott, Foresman & Company.

47. *Reading Maps*, film, Encyclopaedia Britannica Films Inc.

48. *Read Along With Me*, Programmed Records, Inc., 154 Nassau Street, New York 38, New York.

This twelve-inch LP record and accompanying booklet are designed for the home instruction of beginning readers. The child follows the booklet as the words are spoken on the record.

49. *Sounds of Spoken English*, Folkways Records.

This is a short course in enunciation and articulation (Two 10" 33½ rpm. long playing records).

50. *Spencer Audio-Book Series*, Spencer International Press, Inc.

The audio-book series consists of complete books on records. Among the titles offered suitable for children are the following: *The Adventures of Tom Sawyer*, *Pinocchio*, *Call of the Wild*, *A Christmas Carol*, *Alice in Wonderland*, *Treasure Island*, *Robin Hood*, Kipling's *Just So Stories*, *The Wizard of Oz*, *Rip Van Winkle* and *The Legend of Sleepy Hollow*.

51. *Steps in Map Reading*, Rand McNally & Co.

This is a workbook by Mamie L. Andershon, designed for grades five to twelve.

52. *Stories Are for Fun*, Audio-Visual Center, Kent State University.

These are 26 tape recordings for grades one through six.

53. *Telezonia*, Bell Telephone Company.

Designed for grades four through nine this unit includes telephones and 51 film strips. It teaches such reading skills as following directions and skimming.

54. *Understanding a Map*, film, McGraw-Hill Text Film Dept.

55. *What is a Map?* McGraw-Hill Text Film Dept.

The difficulty level is primary and above.

56. *Words: Their Origin, Use, and Spelling Series*, Society for Visual Education, Inc.

This series of filmstrips for grades 6-8 includes:

1. "Words Then and Now" (42 frames).
2. "Roots and Shoots" (48 frames).
3. "Time and People Change Words" (36 frames).
4. "Words and Your Work" (44 frames).
5. "The Right Word in the Right Place" (synonyms, antonyms, homonyms—39 frames).
6. "Increase Your Stock of Words" (41 frames).

57. *Your Dictionary and How to Use It Series*, Society for Visual Education, Inc.

This series for grades four to six includes the following filmstrips:

1. "You Can Find Words Easily" (27 frames).
2. "Make Alphabetizing Work for You" (29 frames).
3. "First You Find It: Then Define It" (26 frames).
4. "Who's Mispronouncing" (34 frames).
5. "The Vowel, Backbone of a Syllable" (36 frames).
6. "Words and Their Ways" (28 frames).

Mechanical Devices

Mechanical devices usually are grouped into tachistoscopes, directional techniques, accelerating devices, and skimmers.

TACHISTOSCOPES

Tachistoscopes expose numbers, letters, words, or other images for short periods of time, usually ranging from 1/100 to 1½ seconds. Most training on these machines is at the higher speeds.

The tachistoscope, whether individual or group, primarily develops the person's perceptual intake skills. By forcing the pupil to cope with intake speeds of 1/10 of a second or less the tachistoscope requires the pupil to see more rapidly, more accurately, and more orderly; to pay better attention to what was seen; and to organize what he has seen. He also has to develop better directional attack.

Since the tachistoscopic span is greater than the span in normal reading, researchers have always asked: What are the effects of tachistoscopic training, and is there any value in increasing the tachistoscopic span?

A tachistoscopic exposure is followed by a period of "nonreading" in which the person can assimilate and integrate what he saw; in reading, there is continuous perceptual activity, the images overlap each other, and there is relatively little time to assimilate and interpret.⁵ Obviously, increasing the tachistoscopic span further seems to be of little value in reading. The training should be directed rather toward developing the intake aspect of perception and toward improving the seeing skills as a basis for better reading rather than toward developing reading skills *per se*.⁵

"Seeing" can be improved and tachistoscopic training is one of the better ways of doing this. It has been used in the armed services, in remedial reading, in orthoptics, in teaching spelling and arithmetic, in art and business education, and even in physical education. In each instance the emphasis has been on the development of general accuracy in seeing and remembering. This is of value in all learning situations in which the pupil must come to understanding through the use of vision (p. 6).¹⁷

There are many by-products of tachistoscopic training. The pupil learns self-discipline, better habits of work, better eye-hand coordination, and improves his focusing ability.

There are many types of tachistoscopic devices. One of the more recent is the Tach-X.¹⁷ This instrument provides a constant light on the screen. It eliminates the constant off-on-off exposure of previous instruments. It snaps the image in and out of sharp focus, thus removing the retinal after-image. The teacher tells the pupils to look at the lighted screen. Then pictures, numbers, words, etc., appear on the screen at the predetermined rate.

Tachistoscopic training has greatest value in the elementary years when the pupil is learning to "see." Since much of the material is designed to develop accuracy of seeing and the retention of the particular placement of certain elements (for example, the pupil needs to see and remember 24571 in a definite order), it may have value in a word-attack program.

Here are some tachistoscopes available today:

1. *AVR Eye-Span Trainer*, Audio-Visual Research.

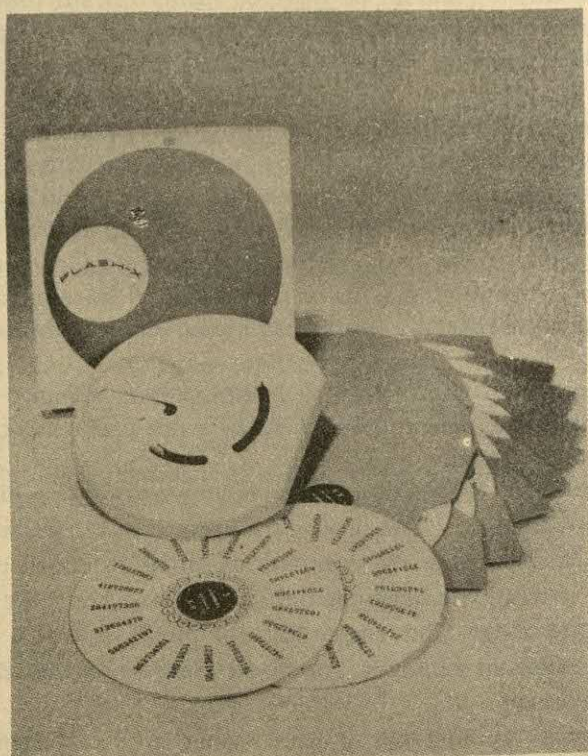
This plastic mechanism offers a simple hand operated shutter device for training in rapid recognition of numbers, phrases, etc.

2. *AVR Flash-Tachment*, Audio-Visual Research.

This is a simple attachment that converts any film strip projector into a tachistoscope. Speeds range from 1/25 to 1/100 of a second.

3. *EDL Flash-X*, Educational Developmental Laboratories.*

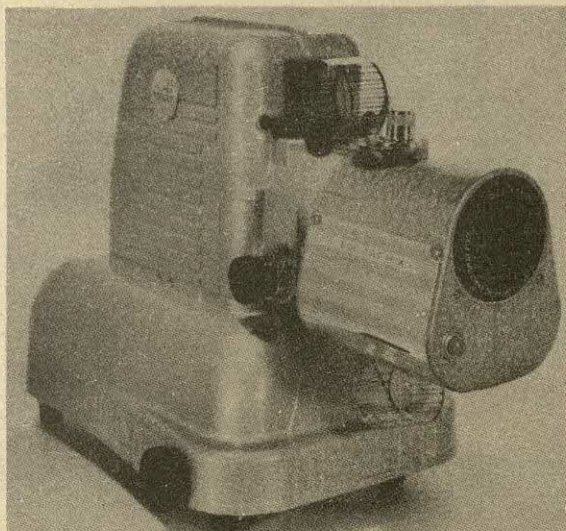
In this device the pupil flicks the tab opening the shutter for 1/25 of a second. The pupil records what he saw and then checks his answer. Discs are provided covering such areas as readiness, primary recognition, numbers, sight vocabulary, arithmetic, and spelling.



* Reproduced by permission of Educational Developmental Laboratories.

4. *EDL Tach-X Tachistoscope*, Educational Development Laboratories. *

Images (numbers, pictures, letters or words) can be projected on a screen for as long as $1\frac{1}{2}$ seconds or as briefly as $1/100$ of a second. The Tach-X is designed to develop visual discrimination and memory. Filmstrips range from the readiness to adult level. Exercises such as the following are very effective. "Watch the Screen. . . . Ready?" The Tach-X flashes y j j j j. "Which letter was different?" The letters are shown again so the pupil can check for accuracy.



5. *Electro-Tach*, Lafayette Instrument Company. †

This is a near point tachistoscopic training instrument for use at all age levels. The exposures are electronically controlled and range from $1/100$ to 1 second.

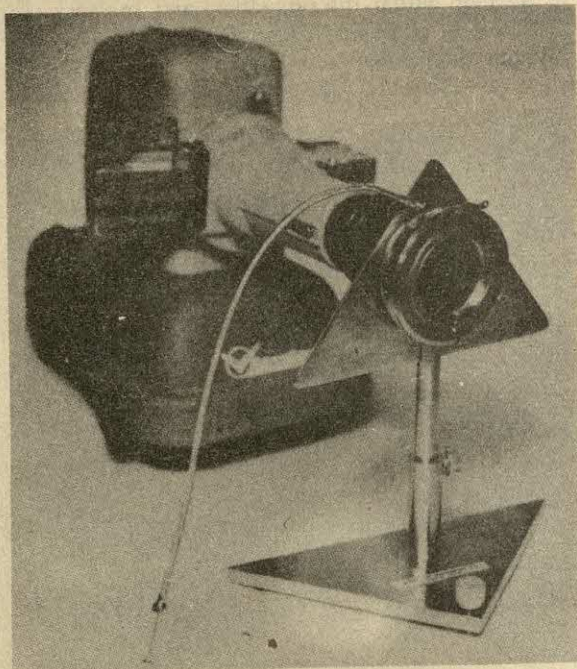


* Reproduced by permission of Educational Developmental Laboratories.

† Reproduced by permission of the Lafayette Instrument Company.

6. *Tachistoscope*, Lafayette Instrument Company. *

This all-purpose group tachistoscope permits exposures of 1, $\frac{1}{2}$, $\frac{1}{10}$, $\frac{1}{25}$, $\frac{1}{50}$, and $\frac{1}{100}$ seconds. It is usable with any make of projector.



DIRECTIONAL TECHNIQUES

A second major group of instruments is used to develop the pupil's left-to-right movement. Many of these instruments also are accelerating devices. They help the pupil to perceive and organize what he perceives, to eliminate unnecessary regressions, to reduce fixations, and to improve concentration.

The material may be presented in line form, as segments of a line, or in phrases. The best time to train the pupil in this skill seems to be during the first three grades.

ACCELERATING DEVICES

The accelerating devices provide rate training for the competent readers. The *Controlled Reader*, for example, presents materials in a left-to-right direction at a pre-determined rate. A moving slot travels across the screen in a left-to-right direction, covering and uncovering the materials as it moves along (p. 4).¹⁸

* Reproduced by permission of the Lafayette Instrument Company.

Such devices lead to a reduction in fixations and regressions, better attention and concentration, more rapid thinking, and improved organization of what is read.

Once the pupil has attained a speed of 450 to 500 words, the words may be more satisfactorily uncovered a line at a time.

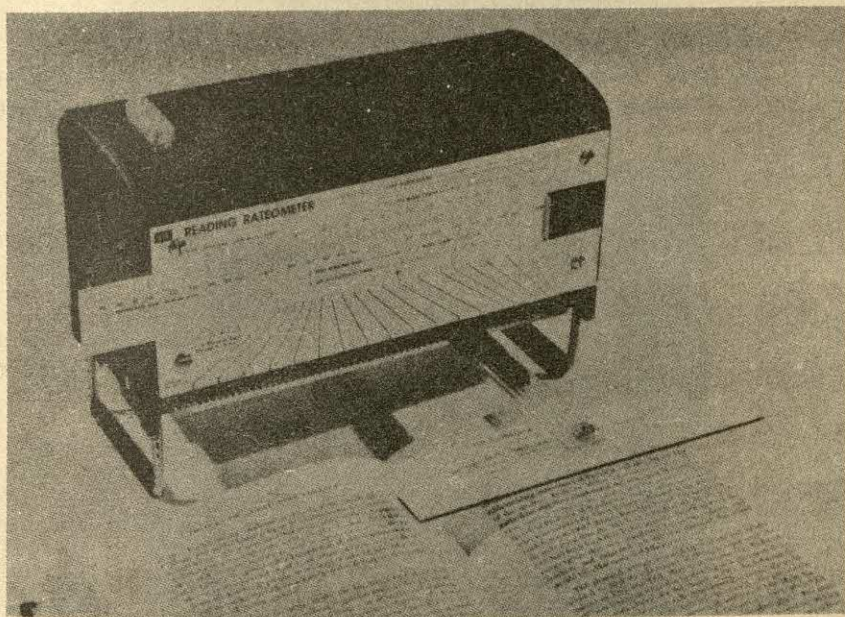
Accelerating devices are most useful in the upper elementary years and in junior high school.

Much group training with accelerators is at far-point. This is undesirable for children with myopic vision and for those who have difficulties with fusion because they are required to improve rate while handicapped visually.¹⁴ At far-point the person also can "read" more words than in normal reading. It is possible that this explains the relative little transfer that occurs from machine programs to normal book reading.

Here is a list of some accelerators on the market today:

1. *AVR Reading Rateometer*, Audio-Visual Research.*

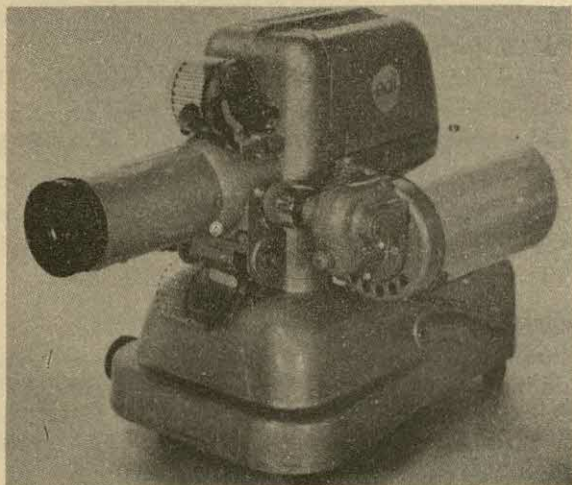
Three models of this machine are available. The standard model (model A) has a range of from 70 to 2500 words per minute. Model B offers a range from 20 to 500 wpm. for remedial programs. Model C offers a range of 140 to 5000 wpm. Each model is equipped with a pacing T-bar that moves down the page at a constant rate.



*Reproduced by permission of Audio-Visual Research.

2. *Controlled Reader*, Educational Developmental Laboratories. *

A moving slot (picture) travels from left to right across the screen or a full line may be uncovered at a time. It permits speeds of from 60 to 1,000 words per minute. Filmstrips are available from kindergarten to adult level, and question books and story books accompany each level.



3. *Craig Reader*, Craig Research, Inc. †

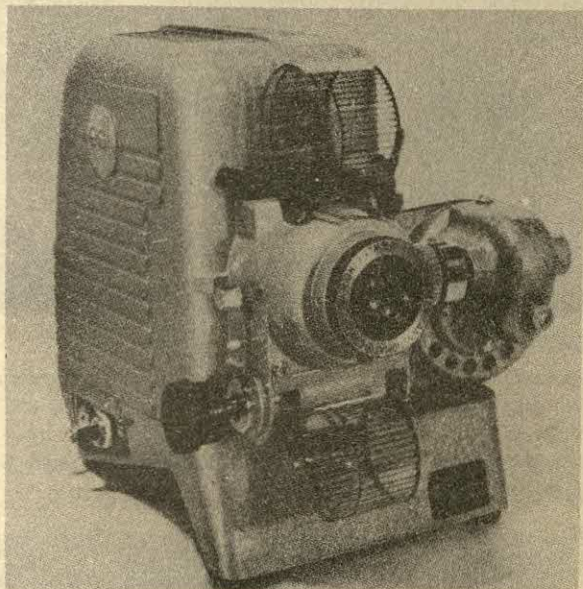
The Craig Reader adjusts to permit reading speeds of 100 to 2000 words per minute. The machine uses slide units rather than film. The slides contain twelve film frames in each slide.



* Reproduced by permission of Educational Developmental Laboratories; † Reproduced by permission of Craig Corporation.

4. *EDL Controlled Reader Jr.*^{*}

This machine is similar to the Controlled Reader but is more economical for individual use.



5. *Keystone Reading Pacer*, Keystone View Company.

This device has a pointer which moves at speeds from 50 to 1000 words per minute. The pacer shuts itself off when the bottom of the page is reached and begins as it is moved to the top of the next page.

6. *PDL Perceptoscope*, Perceptual Development Laboratories, St. Louis 5, Missouri.

This projector serves as accelerator, projector, tachistoscope, or timer. Speeds may be varied on ten films from 120 to 4320 words per minute.

7. *Readamatic Pacer*, Americana Interstate Corporation, Mundelein, Illinois.

This pacer, quite similar in design to the Reading Rateometer, can vary speeds from 100 to 1000 words per minute.

8. *Shadowscope Reading Pacer*, Psychotechnics, Inc. †

The Shadowscope is designed for junior high level and up. The reading speeds can be varied from 125 to 2000 words per minute.

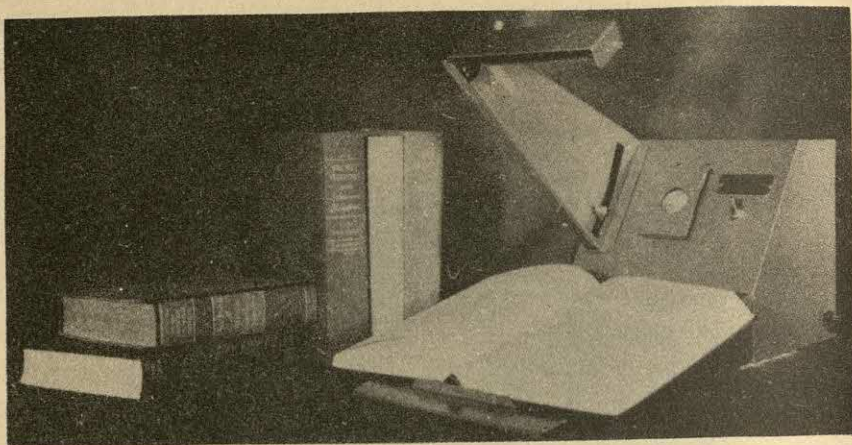
9. *SRA Reading Accelerator*, Science Research Associates.

Model II B offers rate adjustments of from less than 30 to more than 3000 words per minute.

Model III weighs two pounds and adjusts to reading speeds from 50 to 2600 words per minute.

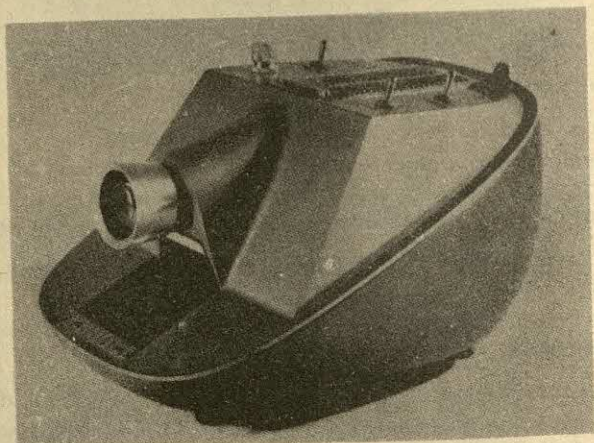
^{*} Reproduced by permission of Educational Developmental Laboratories.

† Reproduced (on page 458) by permission of Psychotechnics, Inc.



10. *Tachomatic*, Psychotechnics, Inc. *

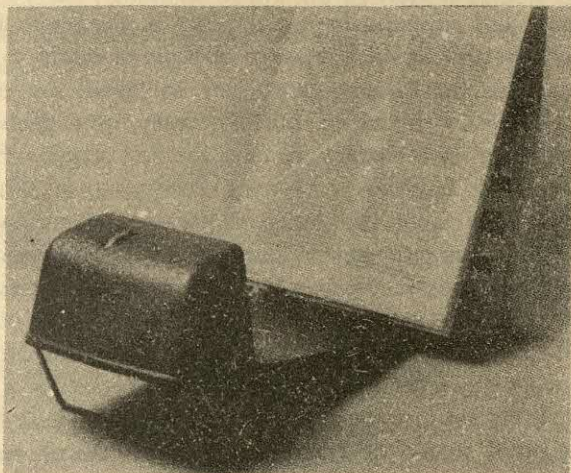
The Tachomatic film projector is designed for reading training at all levels, including that of adults. It utilizes a special film and high-speed mechanism to project series of words in a narrow band across a screen. The rate may be varied from very slow to motion picture speeds and the fixations may be one, two, or three per line.



THE SKIMMER

The only machine available today that is designed to develop the skimming skill is the EDL Skimmer.¹⁶ This machine is equipped with a bead of light that travels down the center fold of the book at the rate

* Reproduced by permission of Psychotechnics, Inc.²



*The Skimmer **

of one-half minute per page or about 800 to 1000 words per minute. This informs the reader how rapidly he should proceed and keeps him perceptually alert. The device is useful also in developing scanning skills.

Skimming is selective reading. In skimming the reader chooses what he wants to read. He selects those sentences, clauses, and phrases which best serve his purposes. He gets a general impression of the selection and decides on the basis of his examination whether to read the selection more intensively. He takes a quick glance at the table of contents, the index, the chapter titles, the paragraph headings, the topic sentences, and the summary. These provide valuable clues to the main idea.

In scanning, the reader runs his eyes down the page with the purpose of finding an answer to a specific question.

We scan a crowd to find a certain person; we scan a bowl of candy for the right piece; and we scan over a box of tools for a plier. In reading, we scan to find an answer to a particular question, to locate a specific date or number, or to locate a reference, a name, a city, or a quotation.

Skimming and scanning are not accelerated reading. In them the reader switches from looking to reading to looking and so on. In fact, there may be less reading than looking and when the person reads he reads in the usual way.⁷

Research tends to indicate that reading rates above 800 words per minute are in the nature of skimming and scanning. The reader characteristically omits part of the content and reads with considerably less comprehension (p. 6).¹⁶

* Reproduced by permission of Educational Developmental Laboratories.

Do skimming and scanning have any place in the elementary school? It is doubtful that any significant usage of them is made in the primary years. However, in the intermediate years the good reader can apply scanning in his use of the index, the dictionary, or a glossary. He can use skimming to survey a chapter. In fact, the first step in effective study or intensive reading involves previewing, surveying, or skimming.

Skimming usually takes the form of preview, overview, or review (pp. 34-37).¹⁵ Skimming for preview purposes has already been described. In skimming for overview purposes the reader gets a general impression of the content. He reads more of the material than when doing preview skimming. He looks for the writer's organization, thinks along with the writer, and notes the transitions. Skimming for review is a useful technique in preparing for tests or to increase retention generally.

When the pupil should be taught to skim is difficult to say. Taylor and Frackenpohl (pp. 9-12)¹⁶ have identified the *type* of pupil who is ready for selective reading. The pupil must be a flexible reader. He needs visual coordination. He must have developed a proper directional attack, and must be able to organize a series of data. He must be able to identify words rapidly, must retain them, and must relate them to each other. He must develop attention and concentration, while maintaining his composure. He must be relaxed and willing to settle for less than complete comprehension.

The pupil must develop a new perceptual skill. In selective reading "looking" is as important as is reading. The person must look back and forth and down the page in a "floating" manner as it were (p. 11).¹⁶ He learns to take in words, ideas, and organization at a subliminal level.

Teaching the pupil to skim may advance through many stages. Perhaps the first is the changing of the pupil's attitude (p. 36).¹⁵ The pupil must realize that partial comprehension meets certain needs. He should be taught that the title of an article by itself gives a general overview. Each pupil has read stories with a title and has probably been told what the title tells him. Generally, the title identifies the content or subject matter.

The table of contents describes the book. It is like a grocery advertisement in a newspaper. The advertisement gives a glimpse of the stock inside the store. It tries to interest the perceiver enough to get him to visit the store and to examine the contents more closely.

Scanning requires similar but also different skills. Much of a scanner's skill lies in knowing what he is looking for and in predicting how the specific point that he is trying to find is stated. For example, distances usually are stated in terms of miles, feet, minutes, or hours.

Let us give a few examples of how scanning might be taught. The exercises suggested here are for the reader of this book rather than for the elementary pupil.

Use the scanning technique as *you* try to find the answer to the following question: "How many children suffer from the condition known as retinoblastoma?"

RETINOBLASTOMA

Retinoblastoma is a cancer found in the eyes of infants and young children. It is somewhat like a tumor. The Retinoblastoma Clinic in the Institute of Ophthalmology of the Columbia-Presbyterian Medical Center in New York specializes in its treatment. Approximately one of every 23,000 children is affected by it. Children are born with it and hence the condition is congenital.

The first symptoms consist of a yellowish-white reflection in the pupil of the eye. When the tumors are small, radiation treatment is frequently successful. At more advanced stages, the eye has to be removed. If this is not done, the cancer spreads and death ultimately occurs.

Find the answer to the following questions by scanning the article below:

Questions:

1. Geochronology was originated in 1900 by Bertram Boltwood. T F
2. Another term for geochronology is
3. The oldest known rocks are approximately years old.
4. The age of the earth may be as much as years old.

Geochronology

Geochronology is the science of measuring ancient geological events. Originated in 1907 by Bertram Boltwood, it has helped us to learn the age of numerous elements of nature as well as to calculate geological sequences of time. We measure the age of a piece of granite by extracting zircon from it. We then measure the uranium and lead content, and knowing the rate at which uranium turns into lead, we are able to estimate the age of the rock.

Today, radioactive dating is continually extending history. Unfortunately, this method is not usable with any substance existing less than a million years.

Willard F. Libby of the University of Chicago has developed another technique for measuring the recent past. He and his colleagues found that carbon 14, a radioactive isotope, exists in an organism that is exposed to the carbon dioxide in the air. It has been found that the carbon 14 so formed will gradually disappear, so that only one-half of it is left after 5760 years, only a fourth after 11,500 years, and only an eighth after 17,280 years. Carbon dating is valid up to 70,000 years.

When uranium breaks down into lead an isotope, called ionium, is formed. The ionium decreases by half in 80,000 years and to one-fourth of the original in 160,000 years. This method may prove useful in measuring the period between 70,000 and 1,000,000 years ago.

The oldest known rocks are about 3,000,000,000 years old, and the age of the earth's interior may well be 4.5 to 5.4 billion years.

No one would suggest that reading instruments make a total program. On the other hand, few would deny that they have a legitimate role in a

balanced reading program. In evaluating their effectiveness one must always be cautious in generalizing from one instrument to all others. Each has its own strength and weakness and must be separately evaluated.

However, there are certain principles that guide all evaluations. It is not enough to simply look for rate gains. The reader's relative efficiency is more than rate; it is also a function of the fixations and regressions (RE) = $\frac{\text{Rate}}{\text{Fixations} + \text{Regressions}}$. An increase in rate is meaningful only when it is accompanied by a reduction in fixations and regressions.

Mechanical devices are motivating. They may even increase comprehension achievement; however, they cannot increase comprehension potential. They merely force the mind to operate on a level approximating its potential.

Persons working with mechanical devices repeatedly have noticed among pupils an increase in interest in reading and in a desire to improve their reading skills. For some of these a successful experience in a machine program may develop a new attitude toward reading generally which may lead to improved performance in a number of areas including rate of comprehension.

It thus frequently is impossible to attribute rate improvements to machines alone. Increased motivation and increased teacher effectiveness may be as significant. No one would suggest that because no gains are made that the machine is necessarily useless. The effectiveness of any mechanical device depends on the user.

To complete this survey of mechanical devices, let us list films used to develop reading skills and some common teaching machines.

FILMS

1. *C-B Speeding Reading Films*, C-B Educational Films, Inc.

This series consists of twelve films ranging from 180 to 536 words per minute. The phrases remain lighted after exposure.

2. *Harvard Films for the Improvement of Reading*, Harvard University, Cambridge, Mass.

This series consists of sixteen films ranging from 180 to 495 words per minute. Each phrase is dimmed after exposure; the background is visible but dimmed. The material is college level. The initial materials allow for five fixations per line; the later materials for as few as two.

3. *Iowa High School Films*, State University of Iowa, Iowa City.

This series consists of fourteen films ranging from 270 to 447 words per minute. Each phrase is dimmed after exposure; the background print is visible but not readable. The materials require three fixations per line.

4. *Purdue Reading Films*, Purdue University, Lafayette, Indiana.

This series consists of sixteen films ranging from 188 to 511 words per minute. Each phrase is dimmed after exposure; the background is dimmed but readable. The initial materials require three fixations per line; the later ones only two per line.

TEACHING MACHINES

1. "The Automated Teaching Didak 501." Rheem Caliphone Corporation, Hollywood, California.
2. "Autoscore"—Astra Corporation, 31 Church Street, New London, Conn.
3. "Devereux Teaching Aid—Model 50," Devereux Teaching Aids, Box 717, Devon, Pennsylvania.
4. "Edumator Machine." Educational Aids, Publishing Corporation, Carle Place P. O. L.I., New York.
5. "E-Z Sort Systems Instructocard Method," E-Z Sort Systems, Ltd, 45 Second St., San Francisco 5, California.
6. "The Foringer Teaching Machine." Foringer and Company, Rockville, Maryland.
7. "GPTC Machines." General Programmed Teaching Corporation, 1719 Girard NE, Albuquerque, New Mexico.
8. "Koncept-O-Graph Machine." Encyclopaedia Britannica Films, Inc., 1150 Wilmette Ave., Wilmette, Illinois.
9. "Min/Max, Min/Max II." TMI-Grolier, 575 Lexington Ave., New York 22, New York.
10. "1984 Machine." Teaching Machines Incorporated, Albuquerque, New Mexico.
11. "Program Scanner." Dyna-Slide Company, Chicago, Illinois.
12. "Speed Machine." Education Engineering Inc., 3810 Pacific Coast Highway, Torrance, California.
13. "Univox Model 'U' Teaching Machine." Univox Institute Inc., Universal Electronics Laboratories Corporation, 510 Hudson Street, Hackensack, N.J.

Programmed materials in the language arts area are available from TMI-Grolier (Modern English Series: Remedial Reading); from the Devereux Foundation (Remedial Reading); from E-Z Sort Systems (Beginning Sight Vocabulary); and from Educational Developmental Laboratories, Huntington, New York (Word Clues).

Readability

The teacher of reading has a vital interest in materials needed in the teaching of reading, but his interest in this is not any greater than is his interest in the readability of the materials that he uses. If the major aim of reading is the comprehension of meaning, the teacher must be interested in the measurement of the comprehensibility of materials. He wants some means for quantifying his statements about the difficulty of material. It is not enough to say that reading material is difficult or easy.

He must have reference points or a scale with which to judge printed materials.

Readability* is not an easily defined concept. It involves an interaction between reader and book. Because communication between writer and reader seldom is perfect, readability rarely can be absolute. It usually is a matter of degree. The teacher thus must make some practical decisions as to the degree of understanding that is necessary before a book may be considered readable by a child at a certain grade level. In short, he must determine how much the reader must get from the printed material before it becomes readable for him.

The concept of readability generally refers to the success that the average individual has with a book. Dale and Chall⁴ point out that readability refers to those elements within printed material that affects the success that a group of readers have with it.

Unfortunately, the teacher cannot be completely satisfied with this concept. A book that is readable for one child may not be readable for another child even if he has the same general level of reading ability. The teacher cannot make prescriptions for the average individual. He must make decisions for a specific child.

One approach to the study of the readability of books is to ask teachers or librarians to rate books according to difficulty. This has been tried and has been found to be inadequate. Teachers and librarians are not proficient in designating the grade-level for which a given book is written. It is doubtful that they have a greater degree of accuracy in picking the right book for the individual youngster.

Another approach was made by Vogel and Washburne.²² They surveyed 37,000 children and developed the Winnetka Graded Book List. This list contained 700 books that children from the second to the eleventh grade claimed to have read and enjoyed. The grade placement of each book was found by determining the average reading ability of the children who read and enjoyed the book.

Teachers frequently use a similar technique. In helping children choose books, they select books somewhat below the pupil's estimated level of reading ability. They obtain a rough estimate of the appropriateness of a book by having the child read orally. They choose two or three selections of 100 words each from the book for the pupil to read, noting the errors as the child reads orally. If he misses more than five words out of a hundred or has less than 85 to 95 per cent comprehension, the child is directed to another book.

Finally, it is possible to develop and apply a readability formula to the book. Since 1923, more than thirty such formulas have been developed. Generally, the authors of these have attempted to identify the

* See Smith and Dechant, *Psychology in Teaching Reading*, pp. 243-255.

factors that make materials difficult to read. The factors most agreed upon are vocabulary, sentence structure, and the number of prepositional phrases.

Vocabulary seems to be the most significant determinant of reading comprehension. Materials are more easily understood when there are few different words than when there are many. They are more difficult when they contain words that call for concepts that are strange and rare. Easy materials generally contain short, simple sentences with few prepositional phrases and clauses.

The goal in developing readability formulas is to get the highest degree of prediction while having to deal with the smallest number of factors. Thus, although the abstractness of the words, the organization and format of the materials, the interest and purposes of the reader, and the experience background of the reader influence the readability of materials, these elements have not been incorporated into readability formulas.

The formulas that have been used most widely are those of Flesch,⁶ Dale-Chall,³ Lorge,⁸ Yoakam,²⁴ and Spache.¹³ The Flesch formula appears to be most useful with adult, middle and upper-grade materials; and the Spache and Vogel-Washburne²³ formulas, with primary level materials.

Readability formulas are not a panacea for meeting comprehension problems. They frequently yield different results and fail to measure many elements considered important for readability. However, they are useful in giving a relative estimate of the difficulty of books, in determining the sequence to be followed in recommending books to a child, and in detecting the difficult words and sentences in the book.^{2, 12}

Each teacher should become familiar with the formula that is designed for reading materials on the level that he is teaching. He will be better prepared to put the right book in the right hands at the right time. The pupil profits greatly. If he understands what he reads, he will be more interested, will read more rapidly, will retain it better, and will be less frustrated.

*Efficiency in Reading **

Although comprehension is of primary importance, efficiency in reading is worthy of attention. The mature reader not only is a comprehending reader; he comprehends at a satisfactory rate.

Here we are concerned particularly with legibility. Since legibility greatly influences the speed with which the reader can digest materials, legibility becomes an important factor in reading. It is related to such

* See Smith and Dechant, *Psychology in Teaching Reading*, pp. 255-263.

factors as illumination, line width, color of paper and print, type size, contrast, and leading. These factors are not so directly related to the comprehensibility of what is being read as they are to the efficiency with which the reading is done.

TYPE SIZES *

One of the factors that affect legibility is type size. Generally readers prefer 11 point type, with 10 and 12 point type next, and finally 9 and 8 point type (p. 148).¹¹ However, 9, 10, 11, and 12 point type are equally legible in a line of appropriate length and with two-point leading (p. 80).¹¹ Children read best with 14 to 18 point type.

Studies^{10, 21} generally indicate that speed of reading is not a valid criterion for determining the effect of type sizes on reading ease below the fourth-grade level. Speed is not an important characteristic of reading at this stage. The pupil is concerned more with the recognition and interpretation of what he reads. Nevertheless, the best evidence indicates that the type size should be between 14 and 18 point in grade one, between 12 and 14 points in grades two and three, and between 10 and 12 points in the upper grades.²¹

Too large or too small type results in more fixations, more regressions, and a smaller perception span.²⁰ Figure 14-1 illustrates the various type sizes.

KINDS OF TYPE

Studies generally have indicated that roman print is more legible than italic type; lower case type is more readable than capitals; book print is more readable than typewriter type; and lightface type is more legible than boldface. Readers also prefer lower case over italics but differences in reading speed are not significant (p. 147).¹² Figure 14-2 illustrates various styles of face type.

LEADING

Increased leading † aids reading ease and promotes speed of reading. Generally a two-point leading is used with adult materials. Most primers use approximately a 12 point leading. Tinker²¹ recommends a

* In printing, the standard measurements are the pica and the point. The pica is about one-sixth of an inch and the point is about one-seventy-second of an inch. Thus, 72 points or 6 picas equal one inch.

† Amount of leading is the distance between two lines of print.

Figure 14-1. Variations in Type Size *

8 point

16. This band of men and women set sail for the new world where they could live in peace. There was great rejoicing when

9 point

16. This band of men and women set sail for the new world where they could live in peace. There was great

10 point

16. This band of men and women set sail for the new world where they could live in peace. There was

11 point

16. This band of men and women set sail for the new world where they could live in peace. There

12 point

16. This band of men and women set sail for the new world where they could live in

14 point

16. This band of men and women set sail for the new world where they could

4 to 6 point leading in grade one, a 3 to 4 point leading in grade two, and a 2 to 3 point leading in grades 3 and 4.

The width of the line can vary greatly without serious effect upon the speed of reading. Although the variation may be from 16 to 30 picas in the primary grades, generally it lies somewhere between 18 and 24.²¹ With adults the variation is even greater, quite commonly from 14 to 31 picas (from $2\frac{1}{3}$ inches to $5\frac{1}{6}$ inches) if the line has 2 point leading and is set in solid 10 point type (p. 148).¹¹ In Table 14-1 we have summarized Tinker's²¹ recommendations for primary reading materials.

Adult readers generally prefer lines from about 17 to 28 picas in length. When the lines are too short or too long, the reader tends to make more fixations and to read fewer words per fixation. Long lines make it

* Donald G. Paterson and Miles A. Tinker, *How to Make Type Readable* (New York: Harper & Row, Publishers, 1940), 33. By permission.

Figure 14-2. Variations in Type Style *

Times Roman

3. This morning my mother asked me to find out what time it was. I therefore ran just as rapidly

Garamond

3. This morning my mother asked me to find out what time it was. I therefore ran just as rapidly as I

Fairfield

3. This morning my mother asked me to find out what time it was. I therefore ran just as rapidly as

Bodoni Bold

3. This morning my mother asked me to find out what time it was. I therefore ran

Caledonia

3. This morning my mother asked me to find out what time it was. I therefore ran just as rap-

Spartan Medium

3. This morning my mother asked me to find out what time it was. I therefore ran just as rapidly as I

Typewriter

3. This morning my mother asked me to find out what time it was. I

TABLE 14-1
RECOMMENDED TYPE SIZES, LEADING, AND LINE WIDTHS
FOR THE PRIMARY GRADES AND ABOVE

	<i>Grade I</i>	<i>Grade II and Grade III</i>	<i>Grade IV and Above</i>
Size of Type	14-18 point	12-14 points	10-12 points
Leading	4-6 point	3-4 points	2 points
Line Width	19-20 picas	19-22 picas	19-24 picas

* Donald G. Paterson and Miles A. Tinker, *How to Make Type Readable* (New York: Harper & Row, Publishers, 1940), p. 14. Reprinted by permission.

more difficult to make the proper return sweep. Short lines lead to choppy reading because the eye does not use peripheral vision effectively.²¹

ILLUMINATION

Luckiesh and Moss (p. 345)⁹ recommend 20 to 50 footcandles * for ordinary and prolonged reading and 50 to 100 footcandles for difficult and prolonged reading. Tinker¹⁰ suggests that with 10 point type an intensity of from 10 to 15 footcandles is sufficient for ordinary reading conditions. Russell (p. 100)¹² believes that ordinary reading requires from fifteen to twenty footcandles for efficient work and higher intensities for detailed and prolonged work.

COLOR AND CONTRAST

The efficiency of illumination depends on the number of footcandles, but also on the reflection factor of the surface. Contrasts of color between paper and print and contrasts of illumination in the room are important factors for ease of seeing. We refer to these as brightness factors.

The black letters on the page receive as much light as the paper itself, but reflect only about one-fortieth as much light (p. 306).¹¹ Generally black print on a light background is a good combination for ease of readability.

Reading efficiency also is decreased by strong contrasts in illumination within the room. The amount of illumination provided in the classroom by the light from the sun varies both with the weather outside and with the location in the room. This situation creates unequal illumination in the classroom and may need to be remedied with artificial light. The surface of the paper generally should be rough enough so that glare is minimized.²¹

Summary

This chapter has concerned itself with materials for teaching reading, with readability, and with legibility. It surveyed materials useful in the development of readiness for reading, of word identification skills, and comprehension. It surveyed in addition booklists, supplementary readers, collections of poems, fairy tales, riddles, rhymes, games, magazines, plays, encyclopedias, audio-visual materials, and mechanical devices. The chapter concluded with a discussion of readability and legibility.

* A hundred-watt bulb gives an illumination of 100 footcandles one foot away; 25 footcandles, two feet away; and about 11 footcandles, three feet away.

PUBLISHERS

1. Abelard-Schuman Limited, 6 West 57 Street, New York 19, New York.
2. Abingdon Press, 201 Eighth Avenue, South, Nashville 2, Tennessee.
3. Allyn and Bacon, Inc., 150 Tremont Street, Boston 11, Massachusetts.
4. American Book Company, 55 Fifth Avenue, New York 3, New York.
5. American Library Association, 50 E. Huron Street, Chicago 11, Illinois.
6. Apollo Editions, 425 Park Avenue South, New York 16, New York.
7. Appleton-Century-Crofts, Inc., 35 West 32 Street, New York 1, New York.
8. Arrow Book Club, 33 West 42 Street, New York 36, New York.
9. Association Films Inc., 347 Madison Avenue, New York 17, New York.
10. Association for Childhood Education International, 3615 Wisconsin Avenue, N.W., Washington 16, D.C.
11. Audio Education, Inc., % American Book Company.
12. Audio-Visual Center, Kent State University, Kent, Ohio.
13. Audio-Visual Research, 523 S. Plymouth Court, Chicago 5, Illinois.
14. Bailey Films Inc., 6509 De Longpre Avenue, Hollywood 28, California.
15. Barnes & Noble, Inc., 105 Fifth Avenue, New York 3, New York.
16. Bausch and Lomb, Inc., Rochester 2, New York.
17. Beckley-Cardy Company, 1900 N. Narragansett, Chicago 39, Illinois.
18. Benefic Press Publications, 1900 North Narragansett Ave. % Beckley-Cardy Company, Chicago 39, Illinois.
19. Benton Review Publishing Co., Inc., Fowler, Indiana.
20. Better Reading Program, Inc., 230 East Ohio Street, Chicago 1, Illinois.
21. Walter J. Black, Inc., Flower Hill, Roslyn, New York.
22. Bobbs-Merrill Company, Inc., 1720 East 38th Street, Indianapolis 6, Indiana.
23. R. R. Bowker Company, 62 West 45 Street, New York 36, New York.
24. Milton Bradley Company, 74 Park Street, Springfield 2, Massachusetts.
25. Bureau of Publications, Teachers College, Columbia University, 525 West 120th St., New York 27, New York.
26. Burgess Publishing Co., 426 South Sixth Street, Minneapolis 15, Minnesota.
27. C-B Educational Films, Inc., 690 Market Street, San Francisco 4, California.
28. Childrens Press Inc., Jackson Boulevard and Racine Avenue, Chicago 7, Illinois.
29. Children's Reading Service, CRS *Audio-Visual Catalog*, Brooklyn, New York.
30. Chilton Company, Chestnut and 56th Streets, Philadelphia 39, Pennsylvania.
31. Columbia Records, 799 Seventh Avenue, New York 19, New York.
32. Combined Book Exhibit, Inc., 950 University Avenue, New York 52, New York.
33. Contemporary Films Inc., 13 E. 37th Street, New York 16, New York.
34. The Continental Press, Inc., Elizabethtown, Pennsylvania,—2336 Farrington Street, Dallas 7, Texas.
35. Coronet Films, Dept. RT-961, Coronet Building, Chicago 1, Illinois.
36. Coward-McCann, Inc., 200 Madison Avenue, New York 16, New York.

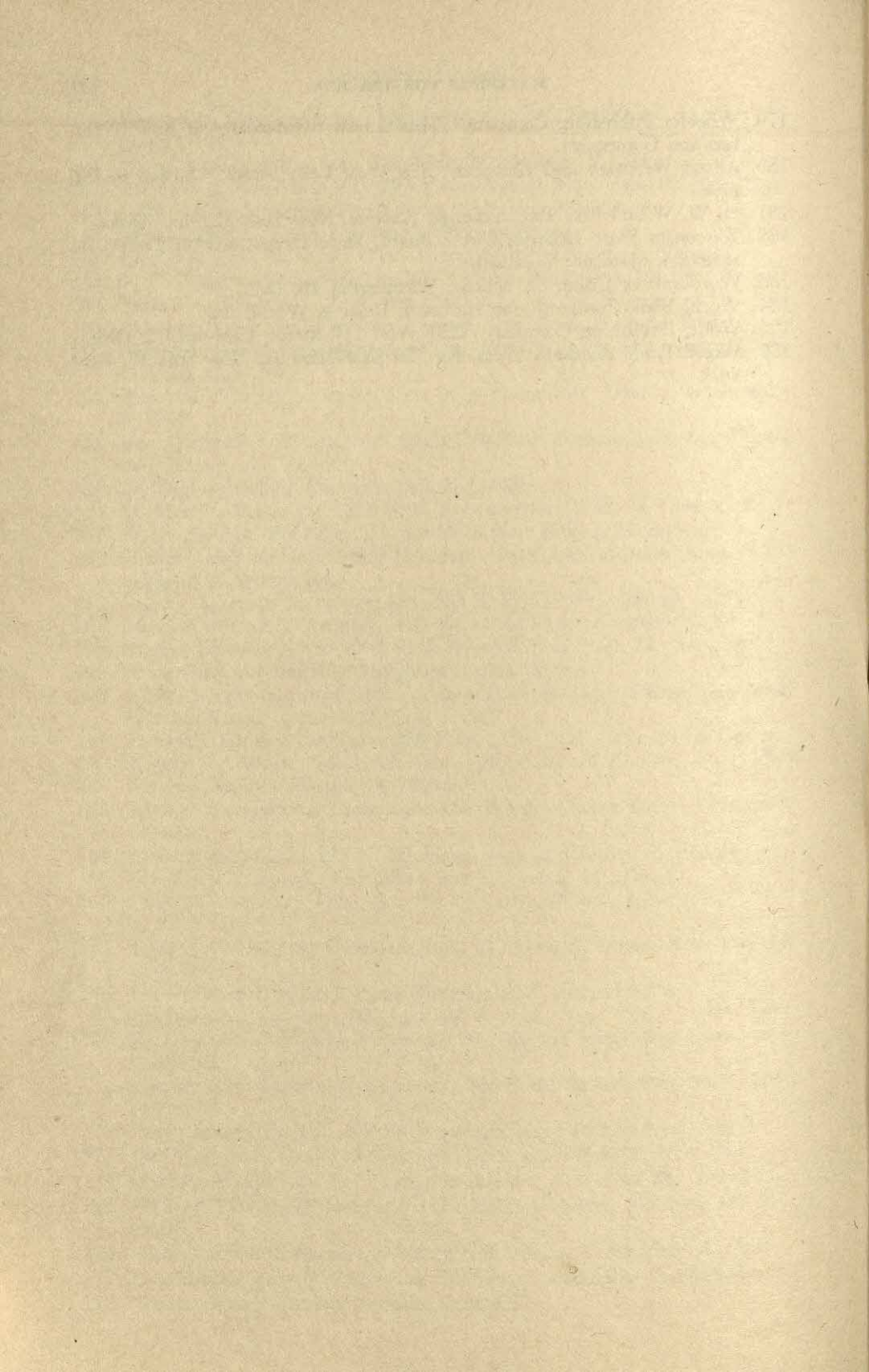
37. Craig Research, Inc., 3410 South LaCienega Blvd., Los Angeles 16, California.
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39. Thomas Y. Crowell Company, 201 Park Avenue South, New York 13, New York.
40. Denoyer-Geppert Company, 5235 Ravenswood Avenue, Chicago 40, Illinois.
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42. Dodd, Mead & Co., 432 Park Avenue South, New York 16, New York.
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44. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, New York.
45. Dowlings, Inc., 607-11 West Grand, Oklahoma City 2, Oklahoma.
46. Duell, Sloan and Pearce, Inc., 60 East 42nd Street, New York 17, New York.
47. E. P. Dutton & Co., Inc., 300 Park Avenue South, New York 10, New York.
48. Economy Company, 24 West Park Place, Oklahoma City 3, Oklahoma.
49. Educational Developmental Laboratories, 75 Prospect, Huntington, New York.
50. Educational Film Library Association, Inc., 250 West 57th Street, New York 19, New York.
51. Educational Publishing Corporation, Darien, Connecticut.
52. Educational Record Sales, 153 Chambers Street, New York 7, New York.
53. Educational Service, Inc., P. O. Box 112, Benton Harbor, Michigan.
54. Educational Stimuli, 2012 Hammond Avenue, Superior, Wisconsin.
55. Educational Test Bureau, Educational Publishers, Inc., Minneapolis 14, Minnesota.
56. Educators Progress Service, Randolph, Wisconsin.
57. Encyclopaedia Britannica, Educational Department, 425 North Michigan Avenue, Chicago 11, Illinois.
58. Enrichment Teaching Materials, 246 Fifth Avenue, New York 1, New York.
59. Essay Press, Box 5, Planetarium Station, New York 24, New York.
60. Expression Company, Magnolia, Massachusetts.
61. Faber and Faber Books, 24 Russell Square, London, W.C. 1.
62. Fideler Company, Grand Rapids, Michigan.
63. Follett Publishing Company, 1010 West Washington Boulevard, Chicago 7, Illinois.
64. Folkways Records and Service Corporation, 121 W. 47th Street, New York 36, New York.
65. Free Press, Glencoe, Illinois.
66. Friendship Press, 475 Riverside Drive, New York 27, New York.
67. Funk & Wagnalls Co., 153 East 24 Street, New York 10, New York.
68. Garrard Press, 510 North Hickory Street, Champaign, Illinois.
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70. Ginn & Company, 205 West Wacker Drive, Chicago 6, Illinois; 72 Fifth Avenue, New York 11, New York.
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72. Golden Gate Junior Books, San Carlos, California.
73. Golden Press, Inc., Educational Division, 1 West 39th Street, New York 18, New York.

74. Graffex, Inc., Dept. AV-111, Rochester 3, New York.
75. Stephen Greene Press, 120 Main Street, Brattleboro, Vermont.
76. Grosset & Dunlap, Inc., 1107 Broadway, New York 10, New York.
77. E. M. Hale and Company, 1201 South Hastings Way, Eau Claire, Wisconsin.
78. C. S. Hammond & Company, 515 Valley Street, Maplewood, New Jersey.
79. Harcourt, Brace & World, Inc., 7555 Caldwell Avenue, Chicago 48, Illinois.
80. Harlow Publishing Corporation, 532-536 N. W. Second Street, Oklahoma City 2, Oklahoma.
81. Harper & Row, Publishers, 49 East 33 Street, New York 16, New York, and Evanston, Illinois.
82. Harvey House, Irvington-on-Hudson, New York.
83. Hastings House, Inc., 151 East 50 Street, New York 22, New York.
84. Hayes School Publishing Company, 201 Rebecca Avenue, Wilkinsburg, Pa.
85. D. C. Heath & Company, 285 Columbus Avenue, Boston 16, Massachusetts.
86. Heritage Press, % Dial Press, Inc., 461 Park Avenue South, New York 16, New York.
87. Highlights, 2300 W. Fifth Avenue, Columbus 16, Ohio.
88. Holiday House, 8 West 13 Street, New York 11, New York.
89. Holt, Rinehart & Winston, Inc., 383 Madison Avenue, New York 17, New York.
90. Horn Book, Inc., 585 Boylston Street, Boston 16, Massachusetts.
91. Houghton Mifflin Company, 2 Park Street, Boston 7, Massachusetts.
92. Ideal School Supply Company, 8316 South Birkhoff Street, Chicago, Illinois.
93. Instructor Subscription Agency, Instructor Park, Dansville, New York.
94. International Visual Educational Service, Inc., 300 South Racine Avenue, Chicago 7, Illinois.
95. Iroquois Publishing Company, Inc., 1300 Alum Creek Drive, Columbus 16, Ohio.
96. The John Day Company, Inc., 210 Madison Avenue, New York 16, New York.
97. Judy Company, 310 No. Second St., Minneapolis 1, Minnesota.
98. Junior Literary Guild Books, Garden City, New York.
99. Kenworthy Educational Service, Inc., 138 Allen Street, P. O. Box 3031, Buffalo 1, New York.
100. Keystone View Company, Meadville, Pennsylvania.
101. Alfred A. Knopf, Inc., 501 Madison Avenue, New York 22, New York.
102. Lafayette Instrument Company, North 26 Street and 52 By Pass, P. O. Box 57, Lafayette, Indiana.
103. Laidlaw Brothers, Thatcher & Madison, River Forest, Illinois.
104. Lantern Press, Inc., Publishers, 257 Park Avenue South, New York 10, New York.
105. Learning Materials, Inc., 100 East Ohio Street, Chicago 11, Illinois.
106. Learning Through Seeing, Inc., P. O. Box 368, Sunland, California.
107. J. B. Lippincott Co., East Washington Square, Philadelphia 5, Pennsylvania.
108. Little, Brown and Company, 34 Beacon Street, Boston 6, Massachusetts.

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110. Longmans, Green & Co., Inc. See David McKay Company, Inc.
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112. Lyons and Carnahan, 2500 Prairie Avenue, Chicago 16, Illinois.
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115. Materials for Learning, Inc., (formerly Children's Reading Service), 1078 St. John's Place, Brooklyn 13, New York.
116. McCormick-Mathers Publishing Company, Inc., 1440 East English Street, Wichita, Kansas.
117. McGraw-Hill Book Company, Inc., 330 West 42nd Street, New York 36, New York.
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119. Melmont Publishers, Inc., Jackson Blvd. & Racine Avenue, Chicago 7, Illinois.
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121. Charles E. Merrill Books, Inc., 1300 Alum Creek Drive, Columbus 16, Ohio.
122. University of Minnesota Press, Minneapolis 14, Minnesota.
123. William Morrow & Co., Inc., 425 Park Avenue South, New York 16, New York: distributor for William Sloan Associates, M. Barrows and Company, Inc., M. S. Mill Company, Inc., Whiteside Inc., Jefferson House, Inc., Reynal & Company, Inc., and Apollo Editions.
124. National Council of Teachers of English, 704 South 6th Street, Champaign, Illinois.
125. National Education Association, 1201 Sixteenth Street, N.W., Washington 6, D.C., Department of Audio-Visual Instruction.
126. Thomas Nelson and Sons, 18 East 41 Street, New York 17, New York.
127. C. H. Nevins Printing Company, 311 Bryn Mawr Drive, Bayshore Gardens, Bradenton, Florida.
128. New American Library of World Literature, Inc., 501 Madison Avenue, New York 22, New York.
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130. Noble & Noble, Publishers, Inc., 67 Irving Place, New York 3, New York.
131. Ivan Obolensky, Inc., 219 E. 61st Street, New York 21, New York.
132. O'Connor Reading Clinic Publishing Company, Inc., 1040 E. Maple Road, Birmingham, Michigan.
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134. Oxford University Press, Inc., 16-00 Pollitt Drive, Fair Lawn, New Jersey.
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148. Random House, 501 Madison Avenue, New York 22, New York.
149. *Reader's Choice*, Scholastic Book Services, 33 West 42nd Street, New York 36, New York.
150. Remedial Education Center, 1321 New Hampshire Avenue, Washington 6, D.C.
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164. Spencer Press, Inc., 179 N. Michigan Avenue, Chicago 1, Illinois.
165. The Steck Company, Post Office Box 16, Austin 61, Texas.
166. Syracuse University Press, Box 87, University Station, Syracuse 10, New York.
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174. Franklin Watts, Inc., 575 Lexington Avenue, New York 22, New York.
175. Webster Publishing Company, 1154 Reco Avenwue, St. Louis 26, Missouri.
176. Wenkart Phonics Readers, 4 Shady Hill Square, Cambridge 38, Mass.
177. Westminster Press, Witherspoon Building, Philadelphia 7, Pennsylvania.
178. Weston Woods Studios, Weston, Connecticut.

179. Wheeler Publishing Company (This is now a subsidiary of Row, Peterson and Company).
180. Albert Whitman and Company, 560 West Lake Street, Chicago 6, Illinois.
181. H. W. Wilson Co., 950 University Avenue, New York 22, New York.
182. *Wisconsin State Reading Circle Board*, State Department of Public Instruction, Madison, Wisconsin.
183. Wordcrafters Guild, St. Albans, Washington 16, D.C.
184. World Book Company, see Harcourt, Brace & World, Inc.
185. World Publishing Company, 2231 West 110 Street, Cleveland 2, Ohio.
186. World Trade Academy Press, Inc., 50 East 42nd St., New York 17, New York.



Part Six



THEORY AND PRACTICE IN TEACHING

Previous sections of this book have concerned themselves with the most significant aspects of the *teaching of reading*. The continual concern has been how the teacher might improve his instruction and thus the pupil's learning. We were particularly interested in how the teacher can help the pupil to learn to read. In many instances, the relationship between practice and theory was not spelled out. Thus, the book to this point has emphasized methodology, relegating theory to a secondary role.

In this last section more emphasis will be put on the theory behind teaching. Theory, especially learning theory, must provide the unifying concept of this book. Theory gives direction and helps to evaluate practice. Learning is what the teacher is trying to promote. Only by knowing what learning is and how it must be encouraged and promoted can he hope to provide effective teaching. *Even if the teacher knew his subject twice as well as he now does, the pupil would not necessarily learn more. The average teacher needs more knowledge in the area of learning.*

Rev. Dr.

THEORY AND PRACTICE IN TEACHING

The theory and practice of teaching is a subject of great importance and interest to all who are engaged in the work of education. It is a subject which has attracted the attention of philosophers, psychologists, and educators for many years. The theory of teaching is the study of the principles and methods which govern the process of learning. It is a subject which is constantly changing and developing, as new discoveries are made in the fields of psychology and education. The practice of teaching is the application of these principles and methods in the classroom. It is a subject which is also constantly changing and developing, as new techniques and methods are developed. The theory and practice of teaching are closely related, and it is essential that they be studied together. This book is a study of the theory and practice of teaching, and it is intended to be a guide for all who are engaged in the work of education.

15

UNDERSTANDING THE READING-LEARNING PROCESS

If the teacher fully understood how the pupil learns to read, the teaching of reading would be rather simple. Unfortunately, this is not the case. The teacher thus is faced with the task of constantly checking his teaching practices against theory and experimentation. He needs to know *why* certain methods work and why some do not.

Too frequently education has been concerned with "what works" rather than with "why it works." Perhaps this is as it should be. As teachers we are primarily interested in creating effective learning situations. We wish to help children to learn. Why they learn better under one approach than under another does not seem quite so important as the fact that they do learn better. Thus, the teacher asks: What is taking place? What will happen if I try this method? He frequently fails to ask: What may account for this event? Why is method A more effective than method B?

Professional teaching is more than a technique; it is a science as well as an art. Teachers are artists rather than mere technicians. Techniques are inert and lifeless; the learner is active. The teacher cannot impulsively apply a "cookbook" recipe to learning problems. He may be content to give first place to the art of effective teaching, but for highest excellence in teaching he generally must know also its scientific basis. He must know the *why* in order to perform the *how*. He must understand the *learner* as well as or better than *what is learned*. He needs to have an interest in the broader aspects of learning even though this may not lead to immediate practical results.

Teaching

Teaching is a "system of actions directed to pupils (p. 233)."⁴³ How well a child learns frequently is dependent upon the educational pro-

visions that the teacher makes for the child. The teacher constantly expands the pupil's meanings by broadening his contact with reality or by helping him to recombine and to perceive new relationships between his existent knowledge and ideas

Snow⁴⁵ points out that teaching often means simply instruction. It is something that is provided from without the learner and results in a flow of information to the student. Education more correctly refers to the internal process of *learning*. Where the former description emphasizes the stimulus aspects, the latter emphasizes the organizational aspects and assigns a greater role to the pupil in the learning process.

The major task facing educators generally and reading teachers particularly is the individualization of instruction. The teacher teaches groups of children, but even the most carefully selected or homogeneous group is still composed of individuals. Thus learning is always an individual process. The learner is an individual and the criteria for effective teaching vary from individual to individual.

The meaning of the previous chapters is this: the teacher cannot devote most of his time and effort to finding out how the *average individual* performs. We are told that poor readers come from homes of lower socioeconomic standing, tend to dislike school, have more auditory and visual defects, lack well-established dominance, and cannot analyze or synthesize.

Many good readers have similar problems and characteristics, but they do not become poor readers. What is the explanation? The whole complex of causes, correlates, and reasons why children fail in reading presents a new pattern of organization for each individual. Each child has his own organization and his own rate and level of growth and development. Just because the child is intellectually able, this is no assurance that all other aspects of his growth and development are in perfect synchronization.

The teacher cannot offer group prescriptions. He must provide a reading program and reading materials that fit the needs of each child and that permit each pupil to advance according to his own abilities and needs. He must provide for the development of each child's unique constellation of characteristics.

To be effective, teachers must know the pupil's individualness. Without this knowledge they cannot provide meaningful learning experiences. Without this knowledge all the rules and generalizations are empty for these are modified and changed in and by every individual. Without this knowledge, the teacher cannot adapt his responses, his rules, and generalizations to the individual.

This does not mean, however, that the teacher can ignore the group and its characteristics. In fact, it may even be dangerous to prescribe too narrowly, or to individualize teaching too much, especially when diag-

nosis and knowledge of the individual is limited. At times, it may even be wiser to teach a group as a group and to treat individuals as alike rather than to instruct singly. To teach a student incorrectly because of faulty differentiation is worse than to teach all students similarly. Frequently, the best indication as to what the individual is like is the average of the group, and the best provision for individual differences may be instruction that fits the average.

This does not mean that differentiation of instruction is universally harmful. It does mean that the teacher must take greater pains in diagnosis. It means that he must recognize the inaccuracy of much of his diagnosis. It means that generally instruction and remediation for the individual should differ only slightly from instruction for the group. It means that irreversible decisions should be avoided.*

Thus, the sound reading program today emphasizes the need for broadening the child's interests; it provides for readiness, gradually preparing the pupil for new words, new meanings, and new reading demands; it gives sequential development of the basic reading skills; it utilizes group dynamics and group instruction; and it provides a series of graded, integrated, and organized materials. Skills are best taught when the pupil is ready for learning them, when the teacher has a plan for presentation, when the teacher has a share in pacing the pupil, and when there is a systematic attempt to maintain the skill.

However, the importance of individualized reading must not be minimized. There are many values in the child selecting his own book, in pacing himself, in the teacher-pupil evaluations of the child's reading progress, and in the child's keeping of his own records.

The Determinants of Reading Success

As mentioned previously, teaching is a series of actions directed towards pupils, and the teacher is the prime stimulator of pupils. He must present the material so clearly that the pupil's attention is focused completely on the task at hand. Attention is not given to a lecture that is "sound and fury signifying nothing" or to a teacher who doesn't have knowledge worthy of the pupil's attention.

However, stimulation is not enough. As we noted in Chapters 3 and 4, there are certain conditions that may prevent adequate learning. In Figure 15-1 we have outlined the various factors inherent in the learning task itself, in the method used, in the individual, and in the institution, that are worthy of the teacher's consideration. Effective learning (and hence effective teaching) commonly does not occur unless the teacher

* For a detailed discussion*see Lee J. Cronbach, "The Counselor's Problems from the Perspective of Communication Theory," in *New Perspectives in Counseling*, Vivian H. Hewer, editor, University of Minnesota Press, 1955, 3-19.

Figure 15-1. The Determinants of Reading Success

<i>Individual Variables</i> (The Learner or the Pupil's Receptivity to Learning)	<i>Task Variables</i> (That Which Is to Be Learned or the Concepts, Skills, and Habits)	<i>Method Variables</i> (The Way It Is Learned or the Experiences by Which the Pupil Learns)	<i>Institutional Variables</i> (The Setting in Which It Is Learned — The Institution)
<i>Psychology of Reading</i>	<i>Reading Content</i>	<i>Reading Method</i>	<i>Educational Setting</i>
1. Experiential Background—Previous Learning	1. Perception Skills	1. Synthetic Method (a) alphabet method (b) phonic method (c) syllable method	1. Resistance to or Acceptance of Change.
2. Language and Speech Development	2. Comprehension Skills	2. Analytic Method (a) word method (b) phrase method (c) sentence method	2. Preservation of Cultural Heritage or Initiator of Cultural Change.
3. Intellectual Development (slow or gifted learner)	3. Word-attack Skills	3. Kinaesthetic Method	3. Retention vs. Promotion
4. Physical Health and Energy	4. Reading-Study Skills	4. Eclectic Method	4. School Organization
5. Visual Adequacy	5. Interpretative Skills	5. Basal Approach	5. Grading Systems
6. Auditory Adequacy	6. Rate of Comprehension Skills	6. Individualized Approach	6. Testing Program
7. Adequate Brain Development	7. Oral Reading Skills	7. Experience Approach	
8. Interest, Curiosity, and Motivation		8. Joplin Plan	
9. Social and Emotional Readiness		9. McCracken Plan	
10. Sex		10. Carden Phonetic System	
11. Discipline for Learning			

understands the nature of these factors and makes adjustments for them.

Downey⁹ speaks of the last three phases listed in the figure above as the substantive dimension (task), the procedural dimension (method), and the environmental dimension (institution). He points out (p. 188)⁹ that a change in any single aspect will result in a modification of all other aspects.

Let us comment briefly on each of the four major determinants of reading achievement.

INDIVIDUAL VARIABLES

In Chapters 3, 4, and 5 we discussed the factors that make reading an individual task, namely: experiential background, previous language development, intellectual development, visual and auditory abilities, interest, and social and emotional maturity. Reading achievement is variable because children are different. They have different biological and environmental backgrounds, and if the teacher is to know how and when to teach what, he must know and understand those factors that make children different. The quantity and quality of reading achievement depend upon the pupil's conscious and unconscious receptiveness to what is taught in the classroom or to what is experienced informally (pp. 39-40).⁵⁵ Only the pupil controls the entrance of sense impressions. He may let them in and permit them to become percepts and concepts or he can reject them.

In general, the psychology of individual differences indicates that:

1. Children achieve at different rates.
2. The differences in achievement increase as children advance through school, being as much as four grades at the first grade level and as much as nine and ten grades at the sixth grade level.
3. Native endowment or biology plays a large role in the development of any child. The child's biological characteristics are prime factors in making him an individual.
4. Intra-individual differences may be as great or greater than the differences between individuals.
5. The achievements of individuals often are marked by spurts and plateaus.
6. Environmental factors may serve as equalizers among individuals. They may tend to make unequals more equal and more similar. Teaching may encourage mediocrity.
7. Membership in a group may lead to the wrong attribution of a certain characteristic to an individual. "All of your brothers are bright, why are you not achieving like them?"
8. The rate of teaching (pacing) must be suited to the child's pace of

learning. Thus, it is an error to presume that the pupil develops meanings and concepts from a single brief explanation.

Through the course of this book we have said nothing about discipline and yet self-discipline is as much an individual variable as are the child's intellectual skills and may have as much influence on the learning of reading as do many of the factors discussed in Chapters 3 and 4. Discipline sets the stage for learning. Without self-control and positive motivation, few pupils will direct consistent effort toward the acquisition of reading skills, habits, and interest. Discipline serves four basic functions: (1) It helps to socialize the pupil; (2) It is necessary for the development of personal maturity and for the acquisition of such traits as self-control and dependability; (3) It is necessary for the development of moral standards; and (4) It is necessary for emotional stability and security (p. 28).¹

Discipline does not mean complete permissiveness. It does not mean only reward and approval. Discipline does not function in a classroom where everybody talks at once, where the teacher is ignored, and where teachers are abused if they exercise their authority.

Discipline may mean the imposition of external standards, and it may mean punishment and reproof. A pupil who has a psychological reason for misbehaving is not thereby absolved from moral accountability or freed from punishment (p. 29).¹ Ausubel (p. 29)¹ adds that the teacher's dignity is just as important as is the pupil's. It is just as wrong for the pupil to abuse the teacher as for the teacher to abuse the pupil.

Some would suggest that children should not be inhibited. On the contrary, without inhibition there is no discipline and experience has shown that self-discipline in the adult rests on the firm foundation of external inhibitions in childhood (pp. 123-124).²⁶

Children always *believe* that what they are doing is the best for them. This does not mean that their judgment is always correct. They are not always sensitive to their needs. The present interests and opinions of pupils are hardly reliable guideposts for designing a curriculum or for formulating standards of classroom behavior (p. 30).¹

Discipline is not merely a *means* to learning; it is an important *goal* of learning. Discipline is necessary for learning, but the pupil also must learn discipline.

Children must learn that the teacher inevitably must in one form or another become a restrictive force to their free use of self-directed freedom.⁵⁴ The freedom or autonomy which pupils seek sometimes is self-destructive and contrary to the goals of a democratic society in which individuals are cooperative and interrelated persons. Pupils must learn that belonging to a society means to sacrifice some degree of individual liberty.

TASK VARIABLES

The major portion of this book has been devoted to the identification and development of the reading skills. The pupil must be taught perception skills, comprehension skills, word-attack skills, study skills, interpretative skills, rate skills and oral reading skills. He must be taught to recognize the symbol and to take meaning to it.

In previous chapters we have offered some guidelines as to when and how these skills should be developed. Some of these guidelines may warrant repetition:

1. The child seeks for what he is physiologically and psychologically ready.
2. Because of the composition of grades, a beginning reader may be learning what some other reader will learn only towards the very end of the primary years.
3. Knowing what skills to teach is not enough for the teacher. He must decide what skills a specific child needs and can learn; he must know what method to use in teaching the skill; and he must be able to construct and use special projects that illustrate, organize, and develop the skills.
4. Skill development does not come in capsule form. One cannot dish out to third graders the third-grade capsule and to fourth-graders the fourth-grade capsule.
5. Every teacher should be familiar with the total skilldevelopment program so that he can perceive its continuity.
6. Introduction of skills is useless unless the pupil's subsequent reading experiences serve to maintain those skills.
7. Every reading skill has its beginning in the earliest school years.
8. There are differences among children in rate of learning. The differences in learning capacity are just as significant. Some children may never master all the skills.
9. A skill that is more difficult for the average third grader may be relatively easier for a specific third grader.

METHOD VARIABLES

Chapter 8 discussed and evaluated the various methods of teaching reading. In this chapter we will discuss the additional factors of motivation, incentives, and practice. Let us first say a few words about attention and perception.

Attention is selective* in that the learner selects from his experience the elements to which he wishes to attend. He lets only certain elements

- * into consciousness. He is constantly bombarded by stimuli, both from within and from without. Hundreds of stimuli are constantly competing with each other for the dominant position.

That the learner considers some stimuli more deserving of his attention than others or that some stimuli are higher in the hierarchy of attention value is of great benefit. The clap of thunder and the streak of lightning may save him from a good drenching.

Attention also is integrative in that the perceiver sometimes can attend to more stimuli if the stimuli are part of a pattern. In reading, our perceptions frequently move from whole to detail and from details to whole. We peripherally attend to the whole when focusing on the part and to the parts when focusing on the whole. Like a camera, we may take in breadth while subsuming detail, or we may focus sharply upon detail while subsuming the whole (p. 183).⁴⁹

Attention also is an energizer in that it elicits the expenditure of human energy and inhibits its expenditure for other tasks. Concentration in one area results in less energy being available in other areas. It has been shown (p. 186)⁴⁹ through electrodes implanted in the auditory pathway in the brain stem of cats that when the cat "attends" to two mice in a bottle, auditory stimuli are not transmitted. In our analysis of vision we found that for children with visual defects whose total energy is devoted to the maintenance of single and clear vision, concentration upon learning tasks becomes impossible or extremely difficult.

Before discussing the last of the learning variables, the institutional variables, let us digress for a while and deal with the fact of perception.

The Perceptual Process

Psychology in Teaching Reading reviewed briefly the major theories of how learning occurs. Here we are concerned with only one theory of learning, namely, field theory.⁵⁰ We believe this theory best explains human learning. Although in Chapter 8 a close parallel was drawn between learning by conditioning and learning to read, a series of questions was raised as to the appropriateness of such an analogy. We were particularly concerned with the role of perception or cognition in the process.

The teacher needs to examine how the child learns to perceive the external reality and, more precisely, how he learns to perceive the printed word. Teachers too frequently perhaps have been concerned only with

⁵⁰ It is difficult to "prove" what learning theory works best. Ultimately, each teacher may need to develop his own theory. Hull was not a Hullian, Skinner was not a Skinnerian, Lewin was not a Lewinian, and Koehler was not Koehlerian. Each built on the past and gave to it the unique stamp of his individuality. Nevertheless, field theory seems to have an advantage in that it emphasizes not the *process of learning*, but rather the *person who is learning*.

the stimulus (the printed word) and the response (reaction to the word) without giving due attention to the intervening element, the organism, or more specifically, the human brain and its functional counterpart, thought.

GOING BEYOND THE SENSORY DATA

Chapters 2 and 8 emphasized two facts: (1) that we can come to know the external world and (2) that we go beyond what the senses provide. Perception has characteristics which cannot be derived from sensation alone.

Here, we wish to explore this last concept more fully. In looking at a chair the senses are not really in contact with the chair at all. What hits the rods and the cones of the retina is a series of light rays that are reflected from the chair. In looking at a circle the person organizes the incoming impulses into a circle even though the pattern (the Gestalt) on the retina is not circular. This presents the perceiver with a peculiar difficulty. Although the light rays are the *cause* of his perceptions, he perceives not the light rays, but the geographical object (p. 79).²⁸ His behavior is determined by the object and not by the light rays.

Because of the above situation the field theorist draws a distinction between the light rays—the proximal stimuli, and the object—the distal stimulus. Generally, psychologists refer to the proximal stimulus as simply the stimulus. Figure 15-2 illustrates the various steps in perception.

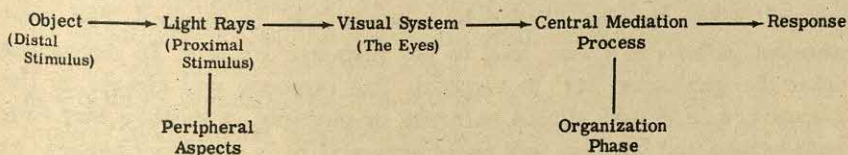


Figure 15-2. The Perceptual Process

The problem has always been: how do the proximal stimuli come to signify the distal stimulus? This, the field theorist identifies as the problem of cognition.

The field theorist is not particularly concerned with the "knowability" of external reality. He accepts the validity of the senses. He assumes that he can know the external world, even though he realizes that many errors may creep into his perceptions.

As a matter of fact, because the perceiver masters the outer world

through his perceptions, he rarely ever knows the true nature of things. His perceptions commonly attain only partial truth because he responds to outer reality in his own way.

Were we in preception chiefly passive, could the things of the outer world impress themselves immediately upon our minds and thus stamp their nature upon it, they would necessarily always leave behind the same ideas, so that a variety of apprehension would be impossible and inexplicable (p. 4).³⁰

THE CENTRAL INTERMEDIARY

To explain *what* (not necessarily *how*) occurs when the person perceives, for example, a chair, cognitive theorists have suggested that the organism's response is determined not only by the proximal stimuli (the light rays) or even the geographical object or experience but also, and perhaps chiefly, by a central process within the organism. This central process influences the person's reactions to the stimulus and provides him with a representation of the distal stimulus or environmental-geographical object or experience.³⁸ *

Field theorists refer to this representational process as cognition. According to Hebb (p. 48)²⁰ cognition, thought, or ideation refers to those processes in the brain which occur in the absence of the sensory events or to new combinations of such processes.

That in reality there is a central intermediary is indicated by experimental data. Hebb (pp. 48, 52-57)¹⁹ gives a few examples.

Pavlov's dog salivated to the sound of the bell only when he was hungry. When he was satisfied he was not "set" to respond. The same stimulus pattern 8, 2 may lead to the response 10, 4, 6, 16 depending upon the particular "set" to respond. The response will change as the learner is told to add, divide, subtract, or multiply. A monkey that likes both lettuce and bananas will reject lettuce if he is expecting bananas as the reward for successful completion of a task.

These data indicate that "set" depends on a neural trace of one kind or another that gradually develops activity of its own without the benefit of an immediate sensory stimulation. Set is analogous to closing a switch in the switchboard of the central nervous system, thus getting the organism "set" to respond in a predetermined way to the incoming data (p. 64).²⁰ Some sets depend on the blood chemistry (hunger or lack of

* Thus each perception of experience is truly individual and may or may not approximate reality. Frequently, it is not the geographical event which determines his behavior, but his perception of it. A year or so ago a father killed his son because he "noticed" that his son's face was becoming distorted. He did not want his son to look like him. Other persons noted no such change.

it in the dog); others depend on neural processes (the lettuce and the banana).

It is most common to hear the pupil say: "I can't concentrate. My attention is constantly wandering." In a sense he is not set to respond to the learning task. Langman (p. 31)²⁹ notes that poor readers cannot attend to the *significant* visual stimuli in word recognition situations. Furthermore, they become distracted by less pertinent stimuli.

In Chapter 8 we noted that poor readers do not perceive the importance of particular details in letter shapes and of their relationships to one another.

We also noted that the poor reader has a special set in responding to words. He tends to think of them in their specific rather than their generic sense.

Set results in the imposition of an organization or meaning upon all incoming sensory data. And each learner is "set" to respond in one way or another; he is set or physiologically and psychologically ready to respond to some details rather than to others.

In reading, set makes the difference between the non-reader's observation of a multiplicity of irregular marks arranged in horizontal lines on a page, and the reader's recognition of combinations of letters composing familiar and meaning-associated patterns (p. 32).^{* 31}

THE ROLE OF EXPERIENCE AND ORGANIZATION

One of our first observations is that the cognitive representation (for example, of the meaning of the word democracy) has many characteristics which are not in the immediate stimulus-situation at all, but are to be found in the past experiences of the organism (environmental) and/or in its organizational (biological) response characteristics.

The organizational response characteristics of the organism are especially interesting. Studies show that "higher" animals perceive relationships which "lower" animals cannot. The spider monkey, for example, cannot grasp the principle of similarity, but the chimpanzee does so very readily. But the two year old child can grasp relationships that the chimpanzee cannot. Thus, the chimp can generalize to A and B, but not to C (Figure 15-3).

Lashley³⁰ notes that all animals learn † but not all can learn the same thing. What is learned differentiates their organizational ability and this essentially seems to be biologically determined. It frequently is not the

* Muriel Potter Langman, "The Reading Process: A Descriptive, Interdisciplinary Approach," *Genetic Psychology Monographs*, 62 (August 1960) 1-40, The Journal Press. Reprinted by permission.

† To define intelligence as the capacity to learn does not discriminate between human and animal intelligence.

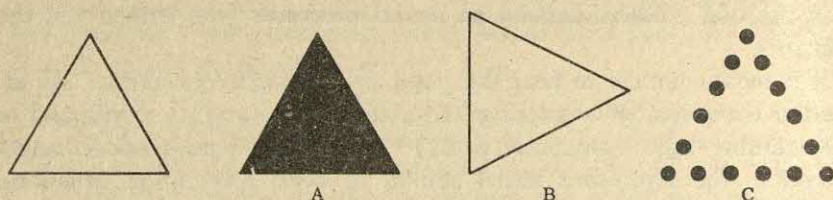


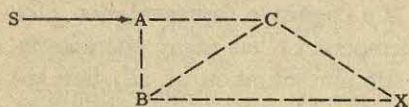
Figure 15-3.*

experience that guarantees the solution of the problem, but rather the organizational pattern or the biological inheritance into which the experience is fitted.

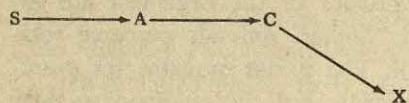
HEBB'S EXPLANATION OF CENTRAL MEDIATION

One attempt to explain the process of central mediation in physiological terms is made by Hebb.^{18, 19} He suggests that during learning a system of cell assemblies and phase sequences† is developed. This process initially is marked by random firing of the neurons, but with repeated stimulation of the receptors, the neurons eventually are organized into phase sequences.

Hebb's explanation of this process is most easily shown by a diagram. In Figure 15-4, cells (or cell systems) A, B, and C are functionally related. When a stimulus activates A and B, ‡ C is fired. As a result



Initial Firing of A and B activates C, setting up a Reverberation in the Circuit ABC



Firing of A alone activates X

Figure 15-4.‡

* Adapted from Hebb (p. 29).²¹

† According to Hebb the residues of past inputs are stored in semiautonomous and reverberating neural circuits which he calls cell assemblies. A series of interrelated networks or cell assemblies is equivalent to a phase sequence, and according to Hebb a phase sequence is the physiological basis for thought. Hilgard (p. 454) ²¹ points out that the cell assembly is roughly equivalent to the neural counterpart of a simple association.

‡ Hebb assumes that initially two cells must fire simultaneously in order to activate a third cell.

§ See Hebb (pp. 103-4).²¹

connections are formed between both A and C and B and C. Subsequent firing of A alone may lead to the firing of a new cell X, because X is functionally related either to B or to C. Interrelated cell systems form a phase sequence.*

The conditioning process, explained in Chapter 8, is analogous to Hebb's postulation. Thus, just as the sound of the bell alone eventually elicited salivation from Pavlov's dog, so also the stimulation of one part of the cell assembly eventually leads to the firing of X. With repeated excitation, a simple excitation of any one assembly starts the entire neural circuit running off by itself.

Hebb suggests that initially the growth of cell assemblies and phase sequences is slow and perception is characterized by vague differentiations. Consequently thinking and learning are tedious. With the organization of elaborate phase sequences conceptual and insightful learning becomes easier, often being triggered off by only one stimulation. Indeed, thought is represented on electroencephalographs as small fast potentials or brain waves.

Tachistoscopic experiments have shown that an individual, with repeated experience, eventually comes to perceive the word (or group of words) by attending only to certain parts of the word or to only certain words in the group of words. Thus, *b tt fly* is readily identified. The individual may identify even butterfly or butterfly, although the former is distinctly harder. This process is explained by Hebb's theory.

Hebb also suggests that frequent stimulation leads to the growth of synaptic knobs† and that these knobs result in a larger area of contact between the axon and the neural tissue into which it fires. Knobs thus lower the resistance between two neurons and result in an easier transmission of nerve impulses. The nerve impulse may travel at the rate of 120 meters per second in large fibers, and less than one meter per second in the smallest fibers (p. 90).²⁰

There is nothing contradictory in Hebb's postulation of knob-like growths. Functions can lead to structural changes. For example, in long standing cases of conversion hysteria structural changes do occur.

SMITH'S CHEMICAL THEORY

Closely related to Hebb's suggestion are those of Smith^{42, 43} who suggests that poor reading may result from faulty function at the synapse.‡

* See Hebb (pp. 103-104).²¹

† A synapse is the point at which the axon of one neuron makes contact with the cell body or dendrite of another neuron.

‡ This theory has been termed the Synaptic Transmission Theory of Reading Disability.

The chemicals, acetylcholine (ACh) and cholinesterase (ChE), control the transmission of nerve impulses from one neuron to another.

The concentration of cholinesterase is especially heavy in the axon, the nerve endings, and in the thin hull of the core surrounding the nerve ending. ACh crosses from the first to the second neuron causing it to fire. The firing continues until ChE breaks the circuit by reducing ACh to its component parts.

It has been noted that poor readers are differentiated from good readers by the inability to blend phonemes and by their very slow reading rate even when they know the words. Blending of words requires the pupil to attack the word sound by sound and to gradually combine the sounds rapidly enough so that the trace from the first sound still reverberates while he is making the second or even the third sound. Thus, in sounding the total word all parts of a word must reverberate simultaneously (p. 15).⁴²

Smith suggests that an overproduction of ACh leads to continuous firing of a network of nerve cells and to an inability to change rapidly one's locus of attention. To blend phonemes the simultaneous firing of two networks is necessary. Unfortunately, by the time a second circuit has been aroused, the activity in the first has ceased, thus inhibiting the blending of the phonemes and resulting in slow reading.

An overproduction of the ChE leads to rapid breaking of circuits and hence to inaccurate perception and to rapid shift of attention. In this instance the pupil may readily substitute one sound or letter for another. He reads *fat* for *fate*.

Smith points out that fixation time in reading depends upon the slowness or rapidity with which the circuit is broken. He suggests that the saccadic movement in reading is really a fixation-shift-fixation process which is dependent upon the release of acetylcholine from the axon and the inactivation of ACh by ChE. The ACh crosses the synapse, fires a neuron, and is quickly reduced to its component parts by ChE, thus releasing attention and permitting a shift in reading (pp. 18-19).⁴²

One explanation advanced for reversal errors is that the child lacks familiarity with the relationship that exists between symbols and their background. And Fildes¹² suggests that children experience difficulty in locating forms in space because they do not pay any attention to the position that forms occupy in space. It is quite possible that some children have not *learned* to place forms in space, but it also is conceivable that some *cannot* do so because the breaking of the neural circuit is too rapid.

A learning theory that purports to deal with central processes must come to grips with the physiological and chemical concomitants of these processes. Hebb's and Smith's theories are such theories and for that reason must be given serious consideration.

PERCEPTIONS AND THE READING PROCESS

Up to this point, we have identified two basic facts: (1) A central process intervenes between the stimulus and the response; (2) This process modifies the stimulus or afferent materials. Cognition organizes the incoming data into a meaningful pattern. William James (p. 103) ²³ noted that "*whilst part of what we perceive comes through our senses from the object before us, another part (and it may be the greater part) always comes . . . out of our head.*"

Our definition of reading, given in Chapter 2, emphasizes the perceptual nature of reading. Reading was described as the process of giving significance to graphic symbols by relating them to one's own fund of experience. Thus, the meaning is not something inherent in a word; meaning at least partly comes from within the reader.

The definition didn't stop there. It indicated that the meaning of a word is a function of experience. The meaning of a perception generally is based on the perceiver's previous experiences. Thus, Lange (p. 21) ²⁸ notes that "we see and hear not only with the eye and ear, but quite as much with the help of our present knowledge, with the apperceiving content of the mind."

Numerous studies have demonstrated that our past experiences influence our reaction to printed or graphic symbols. Chall,⁵ for example, administered a short true-false test of information about tuberculosis to one hundred sixth and eighth graders and had them read a selection on tuberculosis. Those who made high scores on the information test also tended to score high on the reading selection. Chall notes that reading enlarges our experience, but that the greater one's experience, the more profitable one's reading tends to be.⁵

*Psychology in Teaching Reading*⁴⁴ under the heading, "Perceptual Veridicality," emphasized that perceptions rarely are completely representative of external reality. Perception rarely is totally veridical. It is at most an approximate representation. Thus it is rare for two persons to have exactly the same meaning or experiential content associated with a word.

The concept is really a creation of an individual mind and cannot be shared directly. Teachers sometimes behave as though they could share concepts; all they can do is to transmit the words that symbolize the concept. Words sometimes do not convey accurately what is intended and what is intended may not represent accurately the event or experience.

Brunswick (p. 10) ³⁹ refers to the degree of distal-proximal similarity as

"ecological validity." * Generally, the perceiver (as also the reader) calls upon his previous experiences and assumes that the perception that was most successful in the past is the most likely to be correct now. However, numerous experiments have shown that since the perceiver interprets sense data on the basis of his past experience, his interpretation at times is in error.

Generally, the greater the number of experiences and the richer their quality, the greater are the chances for veridicality, but even the most veridical perception may be an inadequate representation of the concrete object or experience. Perception normally remains a representation.

The Field Concept

To explain the facts of perceptual organization, psychologists have introduced the field concept. The field, sometimes labelled the perceptual or phenomenal field, refers to the "more or less fluid organization of meanings existing for every individual at any instant (p. 20)."⁷ Combs and Snygg add that the perceptual field is "*the entire universe, including himself, as it is experienced by the individual at the instant of action* (p. 20)."[†] It is the concomitant and concurrent relationships in a situation.

Since no two individuals have had the same experiences, they cannot have the same perceptual field. Thus the fields of others often seem to us full of error and inadequacy in meaning. We refer to another as prejudiced and bigoted and he in turn may think the same of us. Two children playing in a sand box may live in entirely different worlds.

The significant fact is that the perceptual field is a major determinant of the individual's reactions to external reality or to a word. Wife and husband see completely different realities in looking at a sink full of dishes. Two readers see the word democracy and take completely different meanings to the term. Each one's behavior is determined by his own perceptual field. Each behaves according to how things *seem* to him. He may not actually be responding to the external reality. He more characteristically responds to the *meanings* that each bit of reality has for him.

In summary then, a central process, termed cognition, intervenes between the stimulus and the response and organizes the incoming data into some sort of pattern. This pattern is significantly different from the mass of detail that composes the stimulus situation, because each new stimulus or experience is fitted into a pattern of previous experience. The

* Ecology here means the environmental realities that surround the organism (p. 6).³

† Arthur W. Combs and Donald Snygg, *Individual Behavior*, revised edition (New York: Harper & Row, Publishers, 1959). Reprinted by permission.

response or the meaning that is taken to a word consequently is not learning; it is not organization; it is a sign that perceptual organization or learning has occurred.

The child's response to a word may or may not be adequate. He will react on the basis of his past experience, and if this has been inadequate, his response of necessity must be inadequate. His meaning for the word will be inadequate.

Thus the "meaning" of one's perceptions is almost entirely at the mercy of one's past experience and/or his organizational characteristics. Without the proper experience the reader cannot respond with the proper meaning to the writer's words. If he cannot assimilate experience and use it in understanding reality, he cannot react meaningfully. If he cannot recognize the word, he cannot bring meaning to it. Thus, the prime emphasis in reading must be on meaning, but if the pupil cannot identify the word or has not had the appropriate experience, meaningful reading is out of his reach.

CHARACTERISTICS OF THE PERCEPTUAL FIELD

The perceptual field has numerous characteristics. Let us examine these.

First: The perceptual field of any person usually is much greater than the physical environment. The person's response to stimuli includes past memory traces or residues of neural activity that enter into and change the present field of forces. It consists of the total content of his perceptions. Reactions to words, for example, are dependent on the reader's phenomenal field at the time of action. They are a function of the person's innate endowment, of the quality, number, organization, and reconstruction of prior experiences, of his affective state, and of his culture. They are genuinely organismic reactions. The "whole" child reads. He reads something of himself *into* the written or printed word.

Second: The perceptual field usually is much smaller than it might be. The perceptual field of any individual includes only a small fraction of the objects and meanings that might be present. Some bring a greater number and a much higher quality of meanings to a stimulus situation or to a word or words than do others, but few exhaust the total aggregate of meanings.

Generally, as the number of meanings and experiences connoted by a word increases, the more difficult it is to understand the full meaning of such a word. The reliability of the initial perception of a word decreases as the number of meanings that may be associated with the word increases. A six-year-old child's perception of a word tends to be more reliable if the printed word suggests only one meaning than if it suggests

ten different meanings. In teaching reading more emphasis should perhaps be put on the fact that words have multiple meanings. The pupil needs to learn to look for new and unfamiliar meanings.

Third: The perceptual field has a characteristic figure-ground organization. This means that there are varying degrees of awareness of stimuli. Some stimuli are primary; others are secondary. What the perceiver is aware of is termed the figure and the rest is the ground.

The figure in perception is variable. The person's attention may wander, and with each figure-ground change comes a change of meaning. The same proximal stimuli can become signs for various distal objects.

The proximal stimuli from the picture of art are the same for all individuals, but what is "seen" in or signified by the picture is totally distinct for the artist and for the average layman. The pupil in the classroom may "see" something quite different in the reading task than does the teacher. The pupil's meaning for words changes as he attends with varying degrees of awareness to previous experiences. His reaction to the reading task is determined by his attention on pleasant reading-associated experiences or on unpleasant ones.

Certainly, the proximal stimuli do not determine fully the nature of the perception. What is perceived frequently is not what actually is seen or experienced, but rather what the perceiver believes he saw or experienced or what the perceived things signify.* Individuals perceive objects and events in a way that best fits their perceptual field at the moment.

Various proximal stimuli can become a sign or a symbol for the same referent. This process, frequently labelled stimulus generalization or irradiation, is explained in field theory by improper differentiation. If the stimulus is incompletely differentiated, it will be confused with similar stimuli. In reading numerous errors arise because of this simple fact. The child who reverses, who sees *was* and reads *saw*, makes such an error. He has confused the sign. The explanation of reversals as an inability to locate symbols in space fits this thesis. Reversals frequently may be simply stimuli that are not completely differentiated from all others.

OBSERVATIONS AND INFERENCES

The data thus far discussed lead to certain observations and inferences.

One: The teacher must constantly test the validity of the learner's

* The witness in court presents such a problem (p. 85).⁷ It is sometimes difficult to determine whether the witness actually saw a given individual at the scene of the crime or whether he believes that "he must have been there." In chapter 8 we noted that it is quite possible for the perceiver to say that he "perceived whole words" when in reality he may have inferred the existence of other letters and hence the word.

perceptions and his meanings for words. The pupil's experience may have been too meager. His standards for judging the validity of his perceptions are based on experience. When his perceptions are in error, he must learn to correct his representation. This is best accomplished through the acquisition of new experiences.

Two: Meaning may be presumed to lie on a continuum extending from a minimum of meaning at the left to a maximum of meaning at the right. The concept "tree" lies somewhat to the left of the concept "beauty." Yet, the tree specialist perhaps associates a vaster wealth of meaning with the word "tree" than most people have associated with the word "beauty." Obviously, meaning varies from person to person, from time to time, from perception to perception, and hence from experience to experience.

Since we usually respond to words with our whole biology and experience, our perception of words is very personalistic. Even the most abstract term may lose its abstractness because we cannot react without being ourselves. Thus in a very real sense, our reactions are always intensional, individualistic, specific, or concrete and never quite communicable. We respond to the world in our own way. Children respond to the world in their own way. They respond as children. Their meanings are frequently peculiar to them. Many classroom activities, exhortations, and motivations do not serve their purpose because an adult communicates and interprets adult meanings. The pupil does not "see" the reason for the technique, project, or exercise.

Three: The whole (the total field) is greater than the sum of its parts. A picture is more than spots of paint; a cartoon or joke is more than the sum of its sentences; a musical composition is more than a series of notes; a word is more than a series of letters; and the meaning of a perception is more than the number of sensations.

Sometimes behavior is directed by only a part of the field. This happens when the young man tries to pick up a cigarette from the floor mat and ends up with his car parked in a pasture. It happens when the moviegoer becomes so engrossed with the images and the problems of the people on a screen that he loses all sense of life around him and shares their sorrows. He may cry unashamedly, something which he would not do if the people around him were more clearly in figure (p. 26).⁷

In reading it happens when the pupil latches on to only a very limited or literal meaning. It happens when he reacts only concretely to a communication that calls for a generic response. It happens when the pupil identifies a word by some such part characteristic as an ascending or descending letter and confuses the word with another that has a similar characteristic (people-purple).

Differentiation

The emergence of a new figure from the ground, or the process by which certain aspects of the perceptual field become figure, is called differentiation. The child gradually differentiates "Daddy" (figure) from all other men (ground). The learner, faced with the problem of multiple meaning of words, differentiates one specific meaning from a number of meanings.

The reader may assume that individual differentiations and hence the perceptual field are completely private. At times this may be true, but usually it is not. Individuals of the same culture, whose contacts with the external reality are similar and indeed where the objects are essentially similar, have many things in common. Human beings living in the same environment generally make similar differentiations.

Only because of this are we capable of communicating with one another. We already noted that the major determinants of meaning are: culture, experience, ability to reconstruct experience, previous experience in concept formation, one's native endowment, one's affective state, and the context in which the word occurs. The more alike the above elements are in both communicator and perceiver, the better the communication tends to be.

Communication is the process of obtaining an understanding of another's perceptual field (p. 31)⁷ and it is possible only when there is some common element of experience. Twins frequently do not need words to communicate. They understand each other so well that through gestures or through their general behavior they convey their thoughts and feelings.

Persons with similar experience both make similar differentiations and have similar perceptual fields. Unfortunately, the learner's differentiations often are quite limited. Chapters 3 and 4 contain much evidence concerning the inhibitory factors in learning to read. Reading retardation results because the child cannot make the proper differentiations required for mastery of the reading task.

Differentiations take time and the teacher must constantly make adjustments for this. The application of white paint at the choice points in an otherwise completely black maze leads to quicker and more accurate learning by the rat. In reading, the method of teaching can be simplified or made unnecessarily difficult. The teacher can arrange the learning situation in such a way that the differentiations come easily or are immediately obvious. Teaching machines essentially strive to make each step to be learned so simple and small that it can be taken with great confidence and success.

Learning *

Learning is a change in performance whether physiological or psychological as a result of a differentiation within the perceptual field. It is an active process resulting in a new organization. It is an emergence of new figures, entities, and characteristics from an undifferentiated ground. Hull's concept of the habit hierarchy is an analogous one. Learning thus may be an increasing or raising of the strength of a specific response in a hierarchy of responses. The differentiations result from a change in the figure-group structure either through a new organization of past experiences or by the addition of novel experiences.

What is learned? The learner discovers and understands relationships between the various elements of the present stimulus situation or between those of the present and the past. He is learning what goes with what or what leads to a particular response. In stimulus-response theory the response is learning. In field theory, the response, which is a function of the environmental events (distal stimulus), the receptor events (proximal stimulus), and the organizational and organismic characteristics of the learner, is a sign that learning may have occurred. Changes in behavior or performance may occur without the benefit of learning, and learning may occur without any observable behavior changes. Thus, a person may decide that racial discrimination is bad, but will continue to practice it.

The field-theoretical approach to learning emphasizes the primacy of the whole organism (molar rather than molecular; whole rather than part); it puts major stock in central intermediaries (central rather than peripheral intermediaries or cognition rather than sensation); and it stresses the importance of the pattern, organization, field, or Gestalt. Thus, it may be termed an organismic theory, a cognitive theory, and a Gestalt or a field theory.

Field theory emphasizes that organismic events are best understood if they are studied in the pattern in which they characteristically belong. Behavior and learning can occur only in the whole organism, not in the senses or in the motor segments. Sensation has meaning only as it is in a pattern.

Field theory also stresses that behavior involves a movement towards (or from) a goal and that the directing of the movement is explainable only by a central intermediary between the afferent and efferent (stimulus-response) processes. Only a central intermediary seems capable of explaining the fact that after having attained a goal, the learner sets new goals.

Finally, field theory stresses that behavior and learning are influenced

* Field theorists assume that the laws of organization that apply to perception also apply to learning.

most by the present structuring of the field in which the organism is imbedded rather than by the past history or experience of the organism. Perhaps, no individual is ever completely free to behave on the basis of the present situation. Previous experiences have developed a set or pattern of behavior that is difficult to change. The retarded reader, even if he now sincerely wants to be a good reader, may have to live with his previous inapplication. But, each new situation has within it the potentiality for change. The pupil can usually make positive advances towards new goals and achievements.

INSIGHTFUL LEARNING

Field theorists have put special emphasis on insightful learning. Insight, however, is not an explanation of learning. It is not correct to define learning as a change in performance as a result of insight. Insight does not cause learning any more than practice causes learning. Insight occurs when the differentiation of a relationship is made as a result of the restructuring of the field. Insight is an end-product of having perceived a relationship. In such instances we find that the child readily repeats the correct * solution and applies what he has learned to new situations.

It does not seem necessary that all correct solutions be insightful. The pupil can "learn" the correct response through a trial and error approach or through simple conditioning. In classical conditioning the subject is totally unaware of what he is "learning." Thus, in Pavlov's conditioning experiment the dog was unaware of the fact that he was learning to salivate to the sound of the bell.

In other learning situations the learner may at times not know which of two or three alternatives is the correct response. On a pure chance basis he selects the correct response. This may be termed trial and error learning. On subsequent occasions he may continue making the "correct" response because "it worked the last time." This we would not term trial and error learning. Whenever previous experience is used to solve a problem, even though the learner is totally unaware of how he combined preexistent perceptions with the present situation to arrive at the proper solution, the learner is no longer acting on a chance basis. He probably is engaging in some form of perceptual learning, elemental though it be.

In most "insightful situations" the learner has a relatively high degree of awareness of "what leads to what" or of what leads to the correct solution. This perception of relationships may be encouraged in the classroom through either inductive or deductive teaching methods. Thus the pupil may be shown the principle or relationship directly (deductive method—

* Insights are not necessarily truthful. They are "correct" sometimes only in the perception of the perceiver.

the principle is stated for him) or he may learn the relationship by reasoning from specific fact to the generalization (inductive method).

We have suggested in Chapter 8 that the pupil quite frequently develops a *system* of attacking words. It is better if the pupil is taught such a system and if teaching procedure prepares for it. This will lead more readily to insightful response by the pupil in attacking new words.

Hilgard (pp. 234-237)²⁰ notes that insight or the perception of relationships is more readily attained by the more intelligent and more experienced person. These persons can make sharper differentiations in the field. Hilgard also points out that some experimental arrangements are more favorable to insightful behavior than others. The experimenter in the laboratory and the teacher in the classroom can arrange the situation in such a way that the subject or the child cannot behave insightfully. Thus it has been demonstrated that with proper materials and with proper levels of difficulty the five-year-old can learn to read; with less well-prepared materials even the seven-year-old may not learn. Children, no less than animals, can be put in situations in which they can show only trial and error learning.

Past experiences, and the transfer that is made from the past situation to the present, surely play a major role in the development of insight. These experiences and transfer are a necessary condition, for it is only by seeing relationships among events that the pupil can generalize. Thus, materials are meaningful or insightful because they are partially learned materials (p. 437).⁴⁸ Insight occurs only when transfer is made from one situation to another.

Stroud (p. 437)⁴⁸ points out that:

Meaning, insight, and logical relations are psychological phenomena and have no existence *sui generis* in material of learning. Material is not inherently meaningful; it is endowed with meaning by a reacting individual, and experience, or previous reaction, is a necessary condition. . . . To put the matter in another way, meaningful, insightful, and logical materials are partially learned already.*

ASSOCIATIVE LEARNING

In Chapter 8 it was intimated that reading is both a perceptual and an associative process. In fact, it was suggested that all learning is associative. The use of the word "association" needs explanation. It does not mean that given the necessary past experience the solution will necessarily follow, or that the afferent neural materials keep their own identity and are directly linked to a response.

* James B. Stroud, *Psychology in Education*, © 1956, David McKay Co., Inc. Reprinted by permission.

There is a distinction between association theory and simply an association. Association theory generally has concerned itself with the S-R connection. It frequently has suggested that an individual's past experience completely determines his present response. Thus what *home* means is the number of associations that have been associated with the symbol *home*. The field theorist suggests that the number of associations is not enough, that associations have varying degrees of quality, that there is a hierarchy of associations, and finally that these are organized in a characteristic way.

When we say that all learning requires an association we mean the following: (1) All learning requires at least one performance—for learning is an inference from performance; (2) All learning requires at least one association between a stimulus and a response; and (3) All learning has its neurological counterparts. Thus, the brain receives all sorts of stimuli both from the outside (exteroceptive) and from the inside of the body (proprioceptive) and *somehow* the stimuli are channeled in the direction of a goal.

The determinants of learning generally are identified as: stimulus, response (practice), motivation, and reinforcement. Practice, at least to the extent of one association between the stimulus and the response, is absolutely necessary. In order to learn to recognize the word, *cat* (stimulus), the child must have at least one experience with the word. Generally, the child must make more than one association between the stimulus and the response. However, maximizing the repetitions will not necessarily lead to learning.

PRACTICE AND LEARNING

All theories of learning have to find some place for practice. In field theory practice permits differentiation to occur. Practice is not a cause of behavior or performance change. The child looks at the word for the seventy-fifth time for the same reason that he did the first time. In fact, sometimes the learner breaks a habit by actually practicing the habit (pp. 199-200).^{10, 50, 7} Our suggestions on how to overcome reversals include this technique.

Learning is basically a perceptual or psychological process. Learning to read is basically a perceptual process. But, reading also is a *skill* that is learned, and skills are learned best through practice.

This means that the teacher must find ways and means of developing the skills to be learned. He must guide pupils through the processes and provide them with the materials that are necessary for the attainment of the objective.

There are two types of practice: varied practice and repetitive practice.

Varied practice or range of experience permits the learner to reorganize his experiences at increasingly higher levels of abstractness and clarity. Through this type of practice meanings are extended and refined. Repetitive practice implies a constant repetition of the same experience. It is most effective when a skill has been "learned" correctly and practice is initiated to make the skill habitual. Repetitive practice of what has been done incorrectly merely makes the performer more proficient in doing the wrong thing.

Fortunately, in most learning situations the two types are combined. Practice is varied so as to bring the performance ever closer to the model and it is repetitive so as to increase proficiency in correct performance and to promote retention.

The characteristics of practice may be summarized as follows:

1. Practice or repetition *per se* does not cause learning. The child's practice must be both motivated and rewarded. In school situations practice should be slightly varied from session to session. The pupil should not be required to do the same thing over and over again. Practice should mean increasingly higher levels of performance.
2. Members of a group tend to keep the same relative position during practice.
3. Members of a group tend to become more different rather than more alike as a result of practice. Practice increases individual differences.
4. In general, distributed practice is better than massed practice. This is particularly so when motivation and consequently the attention span are high.
5. Generally, the greater a child's rate of learning, the less practice is necessary for learning to read.

The end result of practice is *habit*. Thus, the pupil with repeated practice learns to respond automatically to the words on the page. He doesn't have to figure out the pronunciation of each word. But habit is more than a fixed sequence of acts that are neurologically determined; it more frequently is the result of learned insights.

Practice tends to make behavior habitual. Habits, although they seem automatic and occur without awareness, are low-level perceptual differentiations. The person performs them with minimum or no awareness. They are more ground than figure. Dunlap¹⁰ overcame the habit of typing *hte* for *the* only after he actually brought back into figure the *hte* by typing it. The differentiation now was clear and he could break the habit. Emphasizing *the* would not have removed from the ground (conscious or unconscious) the previously-learned *hte*.

In Figure 15-5 we have attempted to summarize the basic elements in the process of moving from stimulus to response.

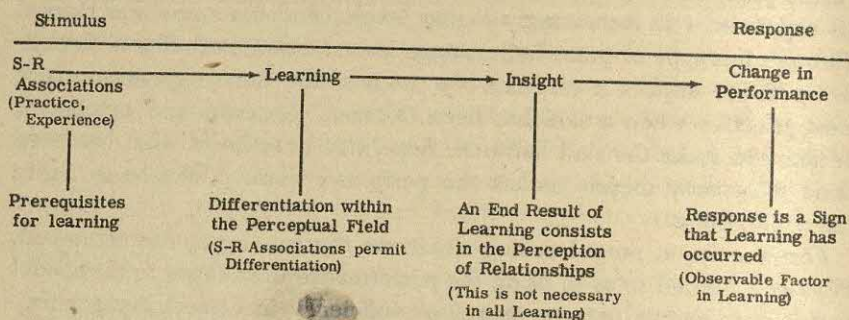


Figure 15-5. Learning

MOTIVATION AND LEARNING *

Practice alone does not constitute learning. In fact, the learner will not respond unless he is motivated. Motivation is the *why* of human behavior. It energizes behavior. It directs responses toward certain goals.

A discussion of motivation seeks to answer three questions (p. 490):²² (1) Why does a person act? (2) Why does a person act the way he does? (3) How is change of behavior brought about?

Traditionally, psychologists have believed that the motivated person is constantly concerned with reducing tension within the nervous system. Thus, in answer to the question, "Why does a person act?" psychologists have said: "The person either is *driven* by primary, internal stimuli which arise when there is a homeostatic or organic imbalance or he is *driven* by external stimuli of a painful nature." These two forms of stimuli make the organism active. They bring the organism into the state of excitation which has been labelled drive. Drives or motives thus are conditions within the organism that initiate activity in the direction of a goal-tension or pain reduction. *Need* is a state of tension created by organic deficiencies or by painful external stimuli.

Much of this theorizing has been "supported" by the work of Claude Bernard, Walter B. Cannon and Curt Richter. Cannon⁴ applied the term homeostasis to the internal physiological balance among the bodily tissues. Thus, the temperature of the body, the acidity base and the sugar concentration of the blood, and the water and salt balance can deviate only slightly without injury to the organism.

Whenever the organism cannot maintain the balance among the tissues, the organism is "motivated" to action. Thus, when the posterior lobes of

* See also Chapter 11 in *Psychology in Teaching Reading*.

the pituitary gland of a rat are removed, the animal will drink a great deal of water. A rat that has the thyroid or pituitary gland removed will build larger nests to compensate for a drop in bodily temperature. A rat without the adrenal glands will drink large amounts of salt solution.^{33, 42} A rat without a pancreas, and consequently diabetic, avoids sugar and eats a large amount of fat. A rat without a parathyroid chooses solutions with a large amount of calcium.³³ Lack of calcium secretion by the parathyroid results in too much alkalinity and may lead to tetany. Extreme acid conditions as in diabetes and nephritis lead to coma.

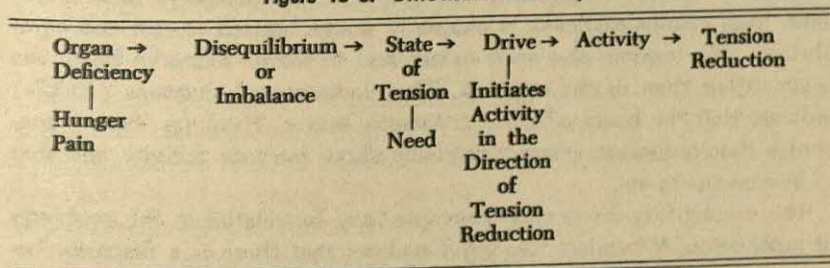
This theory presumes that the organism is essentially inactive when not motivated by internal or external stimuli. However, experience shows that persons are active when neither homeostatic drive or painful external stimuli are present. This is explained thus: Certain innocuous stimuli acquire the capacity to "motivate" by being associated with either painful or homeostatic needs.

Conditioned or learned drives do in fact motivate behavior. Thus rats shocked in a white box will attempt to escape when returned to the white box even though no shocking occurs. Dogs will avoid a buzzer that previously was associated with shock.

Traditionally, psychologists have assumed that the entire group of psychological motives are reducible to organic needs. This is questionable. The needs for self-esteem, esteem of others, curiosity, security, and aggression seem to motivate behavior in their own right and function like the physiological drives of hunger, pain, thirst, and sex. To be human means to yearn for the esteem of others, for self-realization, and for personal adequacy. We further discuss psychological needs later.

In Figure 15-6 we have attempted to summarize the drive-reduction theory.

Figure 15-6. Drive-Reduction Theory



Why does a person act the way that he does? The traditional answer has been "habit." Those ways of reducing drive or tension that were effective in the past are resorted to in the present. Freud's emphasis on the significance of the first five years of life upon later development was based on this. It is pointed out that the major issues of development and

human relationship (dependence, deprivation, discipline, autonomy, sex, and aggression) are met early in life and that the first patterns of response set up precedents which leave the child less free to react differently later (p. 113).⁵⁰ Thus, when reactions are maladjustive in childhood, the adult will find difficulty in making more acceptable reactions (p. 114).⁵⁰

Habits are formed through repeating an act that satisfies a motivating condition. Once they are well developed, they become motives in their own right. Wheat (pp. 57-58) ⁴⁹ points out that:

As a person learns to read, reading enters his mental make-up as a permanent mode of behavior. . . . Henceforth he uses reading as a means of enjoyment and as a means of studying and thinking. To the extent that he can read with ease, reading is a major factor in the control of his behavior. He will often arrange his daily schedule of work and play in order to provide time for reading. He will make sacrifices in order to provide himself with books to read. He will turn to reading as a means of discovering new interests and of losing himself for a time from the actualities of the external world. It is at this point that we see the employment of advanced spontaneous attention. No longer is reading an end on the outside that conflicts with other tendencies. It is now a dominating interest that is within.*

How is change of behavior initiated? The answer in the experimental laboratory has been: Motivate the organism through homeostatic need or through punishment. In dealing with humans we have employed secondary or acquired motives.

Hunt (pp. 489-492),²² after outlining the traditional approach to motivation, calls for certain reinterpretations. He questions the assumptions that *all* behavior is motivated by homeostatic need, painful stimulation, or conditioned stimuli for these. He notes that children play most when they are homeostatically satisfied. Well-fed monkeys solve problems. Man characteristically is unable to resign himself to rest and equilibrium. The tension—the need to act and to learn—seems to be in the brain rather than in the stomach. The electroencephalograms (EEG's) indicate that the brain cells are constantly active. Hunt (p. 493) ²² concludes that organisms characteristically show intrinsic activity and that to live means to act.

The incongruity-dissonance principle may be related to the problems of motivation. Whenever the pupil realizes that there is a disparity between what he is or can do and what he wants to be or could do, a cognitive dissonance results. The pupil is then *motivated* to become more adequate and to reduce the dissonance. Thus, learning may be motivated not so much by what the teacher does or by after-the-learning events

* H. G. Wheat, *Foundations of School Learning*, (New York: Alfred A. Knopf Inc., 1955). Reprinted by permission.

such as rewards and punishments, as by what the learner wants, is interested in, or by what he feels will enhance his self-esteem and personal worth. The motivating condition begins within and is more psychological than physiological.

Motivation then is the end-product of having a goal and being prevented from the attainment of that goal by some barrier, whether physiological or psychological. Not being able to attain one's goal creates tension and results in cognitive dissonance.

When the incongruity or dissonance is slight, it is accommodated or may be tackled as a problem to be solved; when the dissonance is too great, when it is so great that the person cannot accommodate it, the person may become fearful, defensive, or avoid it. A pupil who fears failure in learning to read may not apply himself at all, thereby preserving his self-concept. He reasons thus: "I could learn to read if I really wanted to."

The dissonance theory explains many situations. Chimpanzees don't fear objects they have not previously seen. Familiar objects in unfamiliar disguise (an experimenter in Halloween mask or a model of a chimpanzee's head) (p. 36)¹⁹ do cause fear. Hebb suggests that the chimps have developed (as residues of previous experience) certain cortical patterns or cognitive structures on the basis of which they evaluate new sensory inputs as dissonant or congruous. Darkness is frightening to humans only after the mediating processes have developed sufficiently for the child to conjure up or imagine dangers (p. 164).¹⁹

Motives for the laymen mean *wants, desires, purposes, and goals*. The hungry person doesn't feel *driven* to food; rather he feels that he *wants* it. Sinnott (p. 96)³⁹ points out that:

The conception of goal rather than drive as the basis of motivation is much more in harmony with a philosophy that puts the encouragement of high ideals and aspirations as the best means of elevating mankind rather than with one which depends on environment and conditioning and finally on physiological mechanisms to do so.*

Man wants, desires, and is goal-seeking. His behavior is influenced not so much by his past experiences as by his expectations. If the child has attained a certain level of aspiration, he feels "successful" and normally raises his level of aspiration. The person who earns ten thousand dollars soon raises his level to eleven or twelve thousand.

The learner learns more readily and retention is more permanent when he *wants* to learn, when he actively participates in the learning task, when he perceives the meaningfulness of the task, or when he is moving toward a goal. The goal-directed movements of the learner must be interpreted as his attempts to secure for himself what he interprets as success.

* Edmund W. Sinnott, *Matter, Mind, and Man* (New York: Harper & Row, Publishers, 1957). Reprinted by permission.

Success may be simply the desire to do a good job or to meet a challenge.

Objects also have motivating powers. Ice cream, for example, has qualities other than hunger satisfaction which attract the little child. Learning tasks have varying degrees of attraction and challenge. Reading materials are more or less interesting and children are most motivated by comprehensible and interesting subject matter.

The teacher who operates in a field-theoretical approach is concerned with the personal involvement of the learner. He is interested in creating a mental disequilibrium in the pupil—a feeling of being unhappy and anxious at not knowing. He wants the pupil to feel a personal need for learning. Whereas he pays prime attention to the goals of pupils, he helps them to rethink and reevaluate their goals and to set new ones that are consistent with the goals of education and society.

REINFORCEMENT AND LEARNING

Finally, learning frequently requires the accompaniment of a rewarding situation. As indicated in Chapter 2, each perceptual experience has its emotional matrix. All experiences tend to involve feeling. They may be accompanied by "satisfying" feelings or by "feelings of annoyance." The learner will turn to experiences that satisfy and turn away from those that annoy. In either case, the individual is said to have been "rewarded" or the behavior to have been reinforced.

Rewarding situations are usually referred to as incentives. These are goal objects toward which a behavior sequence is directed. Incentives frequently exist apart from the organism.

There are many reinforcers of human behavior: rewards, punishments, praise, blame, group recognition, knowledge of progress, friendly conferences, or encouragement. Just as not all children are similarly motivated, so also what is rewarding to one child may not be rewarding to another.

Here are a few general principles:

1. Behavior that is reinforced tends to recur and learning that is reinforced comes more easily and is more permanent.
2. Learning that is accompanied by reward is preferable to learning that is under the control of punishment. Punishment may only confirm the child's feeling that school is not for him and that it is a place to be avoided.
3. Reward is more effective when it closely follows the desired behavior or learning.
4. Learning that brings intrinsic rewards (the sense of satisfaction in achieving personal goals) is preferable to learning that is rewarded extrinsically.
5. Information about what is good performance, knowledge of one's

success and failure, and the opportunity to explore one's curiosity and to broaden one's experience may be effective reinforcement situations.

6. Rewards should not be so dominant in the learning situation that the child strives primarily for their attainment rather than for the attainment of educational goals.
7. Reinforcement at regular intervals is most effective in eliciting new behavior; reinforcement at varying intervals more readily maintains the behavior. Thus, "pop quizzes" more readily maintain the habit of study than do regularly scheduled examinations.

Teaching machines with properly programmed materials have much to offer in this area. They offer the following advantages: ^{21, 40, 13, 38}

1. They provide immediate knowledge of success or failure.
2. They permit each pupil to advance at his own success rate.
3. They require the pupil to progress through a logical sequence of steps of increasing difficulty, each step being so small that it can be met successfully and yet leading the pupil closer to full mastery. The jumps are small enough so that mistakes are eliminated.
4. They prohibit the by-passing of any step without mastery.
5. They bring the pupil into contact with the best minds—those who prepared the materials.
6. They require the pupil to be constantly active and alert and to construct his own response.
7. They provide for readiness by presenting material of appropriate difficulty.
8. They provide the teacher with a rather accurate measure of where the pupil is and thus may lead to more meaningful homework and study.
9. They involve the gradual removal of the stimulus. This has been described as fading.
10. They require the pupil to listen or read carefully and to give his full attention. Unlike in the classroom, the teaching material does not flow on without the pupil's attention. The machine sits idle if the learner is not concentrating on the task at hand.
11. The materials are actually pupil-made. The programming is continuously evaluated and corrected until ambiguities and gaps are removed.

The pupil needs to "see" the inherent worth of the learning task. The task must be worthwhile to him. It must be interesting and enticing. He needs to feel that the teacher has his good in mind. He learns to respect a teacher who modifies his teaching to fit his learning needs. He respects a teacher who doesn't demand that the pupil develop full competency. The good teacher does not believe that concepts are learned once and for always. The pupil needs repeated experience with the same task. The teacher must remember that though competence is necessary for academic success, it is not any more necessary than is confidence.

All pupils are motivated. Sometimes the major problem is to pry it

loose. The good teacher uses kindness, recognition, praise, a friendly conference, or a pat on the shoulder. He tries to make the learning of reading a satisfying experience. He capitalizes on the pupil's curiosity and on his desire for improvement. He uses the pupil's identification with him to lead the pupil to greater accomplishment. He encourages excellence. He upsets the pupil's equilibrium and enlarges his expectations. But above all, he makes education something that the pupil wants. *Good entertainment is education and good education is entertaining.*

When education becomes entertaining, the teacher does not have to threaten the pupil with punishment, with failure, or with a slip to be taken home to his parents. A pupil so threatened will work just hard enough and long enough to get the teacher off his back. Having accomplished this he falls back to his normal way of behaving.

Institutional Variables

This brings us to our last set of learning variables—the institutional variables. The teaching of reading functions in a sociological matrix² in which the interaction of numerous persons and groups (children, parents, teachers, schoolboards, departments of education, colleges, press, etc.) determines what will be taught, how it will be taught, by whom it will be taught, and when it will be taught. This matrix determines what research will be done, how it will be interpreted, and how it will be applied. It determines who will be promoted and retained; how the school will be organized; what provisions will be made for the slow and the rapid learner; how large classes will be; what grading systems will be used; and whether classes will be grouped homogeneously or heterogeneously.

Let us examine some of these determining factors.

PROMOTION AND RETENTION *

When should the pupil be retained and when should he be promoted? What effects will retention or for that matter automatic promotion have on the pupil? These are questions that every schoolman must answer.

Retention of a pupil in a grade because the pupil has not measured up to the average performance of pupils in his grade seems contradictory to what we know about individual differences. Retention, in and of itself, also has no positive effect on the child's learning rate.^{6, 16} The pupil does not become a more rapid learner by repeating a grade. After another year in the same grade he will still score below the average for that grade.

Studies (p. 382)⁴⁴ generally have shown that nonpromotion does not

* See Smith and Dechant, *Psychology in Teaching Reading*, pp. 380-383.

necessarily increase school achievement and that frequently it is accompanied by adverse effects in the area of social and personal development.* Pupils who are required to repeat a grade become discouraged, antagonistic, aggressive, and resentful. They feel guilty for having done poorly and parents, brothers and sisters may feel ashamed of them. They are forced to associate with children who may be inferior to them physically and socially. Frequently, there are differences in attitudes, interests, and backgrounds of information and experiences.

Unfortunately, automatic promotion is not a good solution either. It does not develop good habits of study. The pupil comes to look upon school as a place where he gets by without effort. It fails to prepare the pupil for effective competition with his classmates, and it subjects him to frequent failure.

There is no pat solution. Retention and promotion must be based on the merits of the individual case. Only the teacher is in a position to know whether or not promotion is indicated.

THE SLOW LEARNER

Psychology in Teaching Reading (pp. 389-392) outlines the adjustments required in the developmental reading program for the slow learner. The slow learner is not necessarily a retarded reader. He is a learner whose IQ generally lies between 50 and 89.

Usually, the slow learner needs a longer readiness program, needs more frequent stimulation through audio-visual aids, needs more repetition, and needs a more intensive program in phonetic and structural word analysis, in comprehension, and in oral reading.

Teaching must emphasize those reading skills that are necessary for practical living. The pupil must be taught how to read signs, directions, magazines, letters, telephone books, city directories, road maps, job applications, license applications, driver's manuals, appliance guarantees, street guides, menus, recipes, radio and theater programs, advertisements, catalogues, want ads, and newspapers. He needs to become familiar with the dictionary, the table of contents, and indices of books.

THE GIFTED LEARNER

The gifted learner, on the other hand, (IQ of 120 and above) learns through association rather than through rote drill, perceives relationships readily, likes to deal with abstractions, and is curious and imaginative. He early needs to be exposed to critical reading, rate improvement, use of

* A recent study of Worth⁵⁴ indicates that personal and social problems do not necessarily accompany nonpromotion.

the dictionary, and to content-area skills. He needs to develop skill in appreciation, in detecting mood and tone, and in recognizing literary devices. He must learn to identify the author's purpose, to understand inferences, to anticipate outcomes, and to analyze the author's style. He must question the author's sources, look for propaganda devices, and check inferences and implications.

Recently, we have begun to realize that high IQ and creativity are not necessarily the same thing.³² The creative person seems imbued with a tremendous urge to discover and to forge ahead. The academically-gifted child may be satisfied with the acquisition of knowledge. The creative child has a destiny with the improbable. He is looking for new solutions and new methods. The high IQ child may be content with the known; the creative child revels in the unknown.

Educational adjustments for slow and rapid learners generally include: individualized instruction, grouping, differentiated assignments (enrichment), a system of electives, unit instruction, core curricula, broad-fields curricula, retention, acceleration, special classes (honors courses), or special schools.

GRADING SYSTEMS

Closely related to retention and promotion are the teacher's grading practices.

In evaluating achievement it is generally recommended that the teacher understand the process rather than merely the end product. Pupils may know the answer, but don't know how they arrived at it or even may be using the wrong process. It is not uncommon for a child to identify a word through a wrong process. It is not uncommon for teachers to ask children to learn by using a method that is inconsistent with their development.

Marking and grading systems must give consideration to the pupil's rate of development and the level that he has attained. At present grades or marks are indicators of potential rather than achievement. They rank the members in a class, and those obtaining the highest grades almost certainly are also the brightest youngsters. We need to develop a system that rewards achievement, that motivates excellence, and that is useful in diagnosis and remediation.

Our present marking system, since it is based on potential rather than achievement in terms of potential, causes much discouragement and failure. The slow learner, even when he does his best, is likely to obtain a C or a D; the gifted learner, even when he loafs, is likely to get a B or an A. Grading of this kind does not encourage excellence.

It seems that a marking system is inadequate unless it indicates both

potential and achievement in terms of potential. We would propose a dual system. An A would mean achievement equal to one's potential. A grade of B would mean that the individual's achievement is one year below his potential.* A grade of C should indicate that the pupil needs to be carefully studied (case study) and that remedial education probably is necessary.

The second phase of the grading system would evaluate the pupil's achievement in terms of his grade placement. A zero would indicate achievement on grade level; +1 or -1 would indicate achievement one grade above or below grade level; and so on. Thus, a pupil receiving a grade of B +2 is achieving one year below his ability, but two years above his grade level. If he were a fifth grader, he would be achieving like the average seventh grader, but could achieve at the eighth grade level. If this same boy received a grade of A -3, it would mean that he is doing as well as he can, but is achieving three years below his grade level, hence like the average second grader.

Such a grading plan is not easy to use. But nothing worthwhile ever is. Certainly the teacher would be expected to make greater use of standardized tests. Unless a systematic testing program exists in the school, the teacher may not be able to identify the skills and abilities of the pupil. He may not be able to identify on what level the pupil is performing and how much improvement is possible.

Summary and Conclusion

The reading-learning process involves usually two persons: the teacher and the pupil. The teacher commonly is an indispensable ingredient of the learning process, but hardly any more so than the pupil. Education is essentially the internal process of learning and this occurs within a pupil. Learning is individual and until the teacher understands the nature of this individualness, he may not be able to teach the pupil in an optimum way.

In order that the teacher may individualize or personalize education for the pupil, he must understand the variables or factors that affect learning. This chapter discussed the determinants of reading success and broadly categorized them as: individual variables, task variables, method variables, and institutional variables.

The individual variables, those factors within the learner that make learning an individual process, were discussed at length in chapters 3, 4, and 5. The task variables, those factors inherent in the learning task that make the learning of reading more or less difficult, were discussed in Chapters 3, 7, 9, 10, 11, 12, 13, and 14. The method variables were dis-

* At the lower ^{op} levels, for example, in the first grade, a differential of six months between achievement and potential would be significant and be graded as B. 11, 17

cussed generally throughout the entire book, but specifically in Chapter 8. And the institutional variables were discussed in this chapter.

This chapter then discussed in detail how learning is fostered. It began with a discussion of attention and perception. Attention is important in learning because without it the learner will not permit the sensory stimulations to act upon him. Perception follows sensation, and since reading is a perceptual process, it is the basic psychological process in learning to read.

The facts of perception as they apply to the teaching of reading are essentially these:

1. Perception goes beyond sensation. Recognition of a word is not reading. The pupil must react with meaning and this frequently requires the organization of previous experiences. This is perception.
2. Perception of a word or the meaning taken to a word or series of words is usually representational, neither representing wholly or completely the meaning intended. The child uses his previous experience to interpret the words of others. At times his perceptions are in error. The teacher must check on the adequacy of the pupil's experiences and meanings.

The meanings taken to a word usually are many more than one, but also far fewer than they could be. The greater the number of meanings that are associable with a word, the more difficult it is to understand such a word and the less reliable the individual learner's meaning for such a word tends to be. This is why pupils have difficulty with multiple meanings of words.

3. The meaning comes from the learner rather than from the word and is determined primarily by the learner's previous experiences but also by his own constitutional make-up, by the number, quality, and organization of his experiences, by his ability to reconstruct his own experiences, by his affective state, and by his culture. The learner reacts as an organized whole (p. 486).³⁴
4. The central process that controls the learner's particular reaction to printed materials or that modifies the stimulus materials is termed cognition and depends on adequate neural functioning. Thus, as suggested by one theory, an over-production of ACh may prevent the blending of phonemes and results in poor reading; an over-production of ChE may lead to inaccurate perception and frequent confusion of sounds, letters, and words.
5. Perceptions and hence meanings for words are really creations of the individual's mind and usually cannot be shared directly. Thus teachers rarely share concepts; they merely transmit words that symbolize concepts which in turn represent experiences. The teacher can only permit pupils to examine the insights which he offers with the hope that they will see their meaningfulness.

Children respond to the world in their own way. Many classroom activities do not serve their purpose because the adult communicates adult meanings, but the pupil doesn't understand.

6. The sum total of the learner's biology and experiences and his perception of them is termed the learner's perceptual field. This field of psychological and physical, physiological, and social forces as they impinge upon the learner's perceptions at the moment of action, determine his reactions

- to reality, to reading itself, and to words. Simply put, each learner behaves according to how things *seem* to him. He reads something of himself *into* the written or printed word. Rogers (pp. 483-484)³⁴ notes that each person lives in a continually changing world of experience and he reacts to the field as it is perceived. For him, it is reality.
7. The reaction to a word, the meaning in other words, is an indication that the learner has organized his experiences in a specific way. The response is a sign that perceptual organization or learning has occurred.
 8. The perceptual organization characteristically is one of figure-ground. That of which the learner is aware is termed the figure.
 9. The figure-ground relationship is variable or, to put it in another way, the focus of attention may change. With each figure-ground change comes a change in meaning. Today learning to read may be challenging; tomorrow it may be discouraging and undesirable.
 10. The process whereby a figure arises from a ground is called differentiation. The pupil must be taught to use his experience and the context to differentiate the correct meaning from a series of meanings.
 11. Communication is the process of understanding another's perceptual field or perceptual figure-ground organization. This is an essential ingredient in being able to teach effectively.
 12. The child's differentiations are prevented or inhibited by such factors as visual or auditory inadequacies, brain injuries, lack of intelligence, lack of experience, etc.
 13. Learning is a differentiation within the perceptual field and usually results in a behavioral or performance change.
 14. Learning in the classroom functions best when it involves a movement towards a goal. Learning occurs most easily when it represents the goal-directed attempt of the learner to satisfy his needs (p. 491).³⁴ The teacher should emphasize the processes in learning or the steps towards a goal rather than merely the end product or the correct answer.
 15. Learning is chiefly under the influence of the learner's perceptual field at the moment of action. Children learn best by surveying the situation and grasping relationships by perceiving meaningful relationships among the elements of the goal toward which they are striving.
 16. Learning to read requires an association between a stimulus (the word) and a response (the meaning) and is most easily brought about when the printed symbol is associated with a spoken word for which the pupil has previously learned a meaning under conditions of spaced and varied practice.
 17. Repetitive practice usually is necessary to make habitual or to stamp in the association between the printed and spoken word and to develop accurate identification and recognition of the printed symbol.
 18. Practice must be motivated. The pupil learns best when he *wants* to learn a word and its meaning. Emotion, especially that which causes unpleasantness or anxiety, facilitates learning or goal-directed behavior. An individual thus stimulated seeks for the goal. He feels unhappy when he doesn't know. This is cognitive dissonance and it is a more effective motivator than such after-the-learning events as rewards or punishments.
 19. Cognitive dissonance may become too great—the pupil may become fearful or feel that removal of cognitive dissonance by learning to read would

interfere too much with previously formed cognitive structures or self-concepts and thus may become fearful and avoid the goal. Sometimes he will feel that attainment of the goal (learning to read) is not worth the difficulties he will encounter in surmounting the barriers that prevent him from attaining the goal.

Learning proceeds best when the task is challenging but still within the potentiality of the pupil. The pupil must have sufficient interest in the task to use the responses of which he is capable. The pupil needs experience in setting realistic goals, goals neither so low as to elicit little effort nor so high as to discourage him from trying altogether or that in his opinion foredoom him to failure.

20. Sometimes learning is not motivated by cognitive dissonance and thus must be reinforced by rewards, praise, recognition, knowledge of progress, encouragement, blame, or punishment. Rewards and punishments are effective because they change the values of various parts of the psychological field for the pupil.
21. Transfer of learning to new tasks is best promoted by the perception of the interrelationships within the situation and by actual experience in applying the principles to new situations. The pupil should see, for example, the interrelationships between letters in words and apply this knowledge to new words.
22. Learning proceeds best when the pupil knows or senses that the teacher understands him and when the conditions of learning enhance the personal and social development of the learner.
23. The best way to understand the pupil's behavior is from the "internal frame of reference of the individual himself" (p. 494).³⁴
24. It is not enough to understand the child's perceptions. At any moment, there are forces, both physical and social, that influence the child's behavior and of which the child may be unaware. The child is not necessarily the best judge of what is good for him, of why he behaves the way he does, or of how he may best learn.
25. Educational experiences are either:
 - (a) ignored or denied perceptual awareness.
 - (b) accepted or admitted to perceptual awareness and incorporated into one's self-concept.
 - (c) perceived in a distorted way.

Some children simply don't want to learn to read; some want to because it satisfies some need; and there are those who, conscious of some threat in reading, do not make any effort to read while at the same time professing a great desire to want to learn to read. The pupil seems to respond to threat without knowing what causes the threat (p. 506).³⁴

The teacher must interpret the classroom behavior of the pupil from the pupil's point of view. The child does not react to classroom situations as the teacher sees them, but rather as he sees them. The pupil learns only what he wants to learn and he responds to the environment as he has created it for himself.

If the teacher looks upon behavior or performance as being determined and influenced at the moment of behaving by the learner's perceptions, he at once sees the lawfulness and purpose of much of the pupil's behavior in

the classroom. Behavior in the classroom is not without its reasons. It invariably looks to the pupil as being the most effective and most reasonable thing for him to do. It is only through a change of his perceptions that the learner later may see it's "unreasonableness."

Reading experiences in school thus must satisfy the needs of the pupil. They must lead to personal enhancement. Only in this way will the pupil become and remain an active participant in the learning process. If his needs are not satisfied, he will revert to laziness, inattention, and perhaps even hostility. He will turn to other objectives and goals. Reading must satisfy his needs or he will turn away from it.

The simple fact is that learning occurs only if the pupil wants it to occur. Adult attempts to "force" learning rarely are effective. The best laid plans for retention or promotion, passing or failure, go awry if the pupil prefers other self-enhancing experiences more than he hates the censorious grade.

Teaching is rarely only a matter of presenting subject matter. Each bit of subject matter has a *meaning* for the pupil and on it depends whether the pupil will learn or reject, whether he will simply acquire or make learning a part of living. It is not uncommon to find pupils who learn to read, but who rarely read.

In a school, where the teacher is concerned with the meanings that realities have for the perceiver, methods of teaching are not hard and fast. No method completely fits the nature of the pupil or the teacher's personality or provides for the goals of education at all times. Methods of teaching are always individual. Even if a method should work, that is, if the pupil is willing to accept it without reluctance, this may well fall short of good teaching. Its usefulness, as indeed that of all educational procedures, is not independent of the meaning that it has for the pupil. Above all, method should become a stimulus that will activate the pupil's own dormant resources, that will actuate the pupil's potentialities, and that will develop within the pupil independent and self-directive behavior.

Questions for Discussion

1. When would total individualization of the reading program be inappropriate?
2. What is teaching?
3. What is the importance of the organizational aspects in learning?
4. Classify the determinants of reading success.
5. What basic facts are taught by the psychology of individual differences?
6. Explain: Environmental factors may serve as equalizers among individuals.
7. Discuss the nature of discipline and distinguish it from license.
8. Harmonize the fact that the pupil may have psychological reasons for misbehaving with demands for moral accountability.

9. Discuss the importance of discipline as a goal of learning.
10. What is the role of attention in perception?
11. What is the nature of perception?
12. What is the meaning of set and discuss its implications in reading?
13. What is the significance of Hebb's physiological and Smith's chemical emphasis?
14. Explain reversal errors as a symptom of ACh & ChE dysfunctioning.
15. Is it possible to share directly one's concepts with another person?
16. What is the meaning of "field" in field theories of learning?
17. Illustrate how the "perceptual field" influences the meaning content that the pupil takes to a word, sentence, or paragraph.
18. Explain the figure-ground organization of the perceptual field.
19. Explain: What is perceived frequently is not what actually is seen but what the perceiver believes he saw.
20. Define differentiation, learning, insight, communication, and transfer.
21. What are the basic tenets of field theorists?

Basic Reading Principles

1. The best provision for individual differences may at times be instruction that fits the average.
2. The cognitive representation is dependent upon the past experiences of the organism and upon its organizational (biological) response characteristics.
3. The greater one's experience, the more profitable one's reading tends to be.
4. The greater the number of experiences and the richer their quality, the greater are the chances for veridicality.
5. The more similar the child's experience and background is to that presupposed by the writer, the more the child will learn from reading.
6. The learning that results from reading depends on the ability of the reader to test the writer's experience by relating it to his own experience.
7. As the number of meanings and experiences connoted by a word increases, the more difficult it is to understand the full meaning of such a word.
8. Reliability of initial perception of a word decreases as the number of meanings that may be associated with the word increases.
9. All learning requires at least one performance, one association between a stimulus and a response.
10. The lower the level of generalization, the less the transfer possibilities; the higher the generalization, the greater the possibilities for transfer.
11. The lower the generalization, the better it is understood and the more people will act upon it; the higher the generalization the fewer persons will understand it and act upon it. Thus, the more abstract the generalization, the fewer will understand it, but the greater will be the possibilities for transfer.
12. The tendency to read is a function of previous habits of reading, of motivation, of the reinforcement value of reading, and of the proximity with which reinforcement follows reading.

13. The more reading the child does, the greater is the tendency to engage in additional reading. Genuine interest in reading is developed through actual reading.
14. The greater the desire to read and the better reading satisfies personal motives, the greater is the tendency to read. (To get a child to read, put reading between a child and the goal he is seeking to attain.)
15. The more interesting reading becomes and thus the closer it comes to being a motive in its own right, the greater is the tendency to read.
16. The greater the reinforcement value of reading, the greater is the tendency to read on subsequent occasions.
17. The effective tendency to read (sEr) is equal to the total tendency to read (sEr) minus the inhibitory factors (Ir) that tend to block performance. The tendency to read frequently is lessened by certain factors that tend to block performance. Among the inhibitory factors in reading are health, fatigue, amount of energy needed for reading, and the number of unreinforced reading experiences.
18. The greater the amount of energy the reader must expend in reading, the less he tends to read. (The more difficult the materials are, the quicker the student becomes fatigued.)
19. An organism's tendency to respond through reading is subject to a certain amount of variability. A child may be able to give the meaning of a word 99 out of 100 times, but occasionally he cannot do so. On certain days a child may not care to read, regardless of the fact that the class schedule calls for reading.
20. The more alike two stimuli are, the more nearly one can substitute for the other. (The more alike two words are, the greater are the chances that the child will make a similar response to each.)
21. The good reader is differentiated from the poor reader in that he has made more distinct associative connections and he needs fewer cues to arouse responses. (He requires less and less stimulation to make more and more responses. This applies both to the perception as well as the recognition of words. Each word suggests a wider range of meaning, and he needs fewer cues to recognize a word.)
22. Learning to read is a function of reinforcement. Only a minimal amount of reinforcement is needed to reinforce learning. Additional reinforcement strengthens the tendency to respond (sEr), but may have no effect on learning.
23. Learning is a decreasing function of the delay of reinforcement. (Reinforcement is effective in direct proportion to its proximity to the response. Immediate knowledge of one's success reinforces more than does delayed knowledge. The closer the goal, the greater is its reinforcing value. Short-range goals have greater effects than long-range goals.)
24. The strength of the contiguous stimulus-response connection gradually weakens and eventually becomes extinguished when no reinforcement accompanies its occurrence.
25. Learning to read is a function of *meaningful* reinforcement. (Reinforcement must have meaning for the child. The words of praise of one person may motivate while those of another do not.)

APPENDIX I

Multiple Spellings of Certain Consonants

Ch: The *ch* sound may be spelled as *ch* (church) or as *tu* (nature, actual, future).

D: The *d* sound in verbs frequently is spelled *ed*. Thus for example, we have begged, bragged, canned, and crammed. Usually the sound is spelled simply by *d* as in bed, fed, and red.

F: The *f* sound may be spelled as *f*, *ph*, or *gh*. In the words, fad, fan, fat, fed, and for, the *f* is spelled as *f*. In cough, draught, laugh, rough, tough, trough, and enough the *f* is spelled as *gh*. In phase, phew, phlegm, phone, and phrase the *f* is spelled as *ph*. The *ph* spelling is common in scientific and medical terms of Greek origin, such as morphine, lymphatic, diaphragm, and diphtheria.

J: The *j* sound is spelled as *g* (magic), *ge* (page), *dg* (judgment), *dge* (judge), *ch* (Greenwich), and *di* (soldier). The most common spellings are *j*, *g*, *ge*, and *dge*. The *j* sound is spelled as *j* in jam, jet, Jim, job; it is spelled as *g* in gem, gene, germ, gist; it is spelled as *dge* in age, barge, gauge, hinge; and it is spelled as *dge* in badge, bridge, budge, and dodge. The common spellings for *j* at the end of words are *ge* and *dge*.

K: The *k* sound is spelled as *c* (call), *cc* (account), *ch* (choir), *ck* (back), *oq* (acquire), *cu* (biscuit), *k* (rank), *q* (quack), *qu* (liquor), and *que* (clique). The *c* spelling of *k* is most common, such as cat, can, come, and came. Before *e* and *i* the initial *k* sound usually is spelled with a *k*. Thus we have the following words: keg, kept, kick, kid, kill, kin, and king. *K* is also used in khaki and kangaroo.

A final *k* sound preceded by a consonant is usually spelled as *k*: thus, ark, ask, balk, bark, and bask. When the final *k* sound is preceded by a short vowel sound as in back, beck, black, buck, and click, it is spelled as *ck*. A final *k* sound preceded by a long vowel has two options—*eke* or *eak*, oak or oke. In a medial position when the *k* sound begins a new syllable it is usually spelled *c*. There are many exceptions: yokel, market, basket, trinket, blanket, tinkle, twinkle, wrinkle, lamkin, and manikin.

The student should become familiar with the various combinations of *act*, *ect*, *ict*, *oct*, *uct*, and *inct*, as in the words fact, compact, elect, reject, depict, evict, concoct, conduct, instruct, and instinct.

In words ending in *et* and *le* as ticket, jacket, pocket, rocket, bucket, tackle, sickle, and trickle, the first syllable usually ends in *ck*. The *k* sound is spelled as *ch* in many Greek words: chasm, choir, Christ, chrism, chrome, and scheme. It appears also, for example, in ache, archive, chaos, chorus, school, character, chronology, echo, epoch, lichen, orchid, drachma, and troche.

Finally, the *k* sound may be spelled as *que*: thus, clique, unique, antique, and mosque.

Ks: The *ks* sound is spelled as *ks*, *cks*, *cs*, *ks*, and *x*. Nouns ending in *k* form their plural by adding an *s*; the third person singular of verbs also ends in *s*. Usually, the *ks* sound at the end of words is an *x*; thus: fix, mix, six. The *ks* sound may be spelled as *cc* or *cs* before *e* or *i*, thus: access, success, tocsin.

S: The *s* sound may be spelled as *c*, *s*, or *sc*. Generally, the *c* or *sc* spelling occurs before *e*, *i*, *y*. The most common exceptions to this are: self, silk, system, sell, sent, site. The final *s* sound may be spelled as *s*, *se*, or *ce*. Although most words end in *ence* or *ance*, some (dense, sense, expense, dispense, condense, intense, nonsense, defense, pretense, immense, and recompense) end in *ense*.

Sh: The *sh* sound may be spelled as *sh* (ship), *ch* (machine), *sch* (schist), *ce* (ocean), *s* or *ss* (issue), *ti* or *si* (mission), *sci* (conscience), and *ci* (special). The *ch* spelling occurs commonly in words of French origin, such as cache, chef, gauche, chute, chandelier, Chicago, champagne, mustache, parachute, chiffon, stanchion, and luncheon. The *sh* sound of *ci* is evident in ferocious, ancient, glacial, spacious. The *sh* sound of *s* or *ss* occurs in fissure, issue, pressure, sure, sugar, and tissue.

The pupil needs to learn the *sh* sound of *ti* and *si*. Numerous words in English are examples of this: thus, compulsion, expulsion, impulsion, propulsion, immersion, submersion, aversion, diversion, ascension, comprehension, controversial, transient, vexatious, contentious, negotiate, partial, venetian, spatial, condition, expedition, ignition, ingratiate.

The *sh* sound also may be spelled as *ci*: thus, coercion, ferocious, glacial, and appreciate.

T: The *t* sound is spelled commonly as *t*; in past participles, such as clapped, dipped, and dripped, it often is spelled *ed*.

Z: The *z* sound is spelled as *s*, *z*, and *x*. The pupil needs to become especially familiar with the suffixes *ize*, *lyze*, *ism*. Some common words in which the *z* sound is spelled as *s* are: is, his, was, has, rise, pose, wise, those, poise, these, tease, close, chose, prose, noise, cause, ease, lose, easel, use, cheese, abuse, amuse, propose, please, praise, confuse, dispose, infuse, busy, advise, advertise, exercise, surprise, blouse, accuse, rose, nose, and hose.

Zh: The *zh* sound often is spelled as *s* or *z*: thus, treasure, pleasure, collision, casual, azure, and seizure.

Multiple Spelling of Vowels

The spelling of vowel sounds presents many more difficulties for the pupil. In the first place, there are so many alternatives. However, the teacher, if not the pupil, may benefit from knowing what these alternatives are. Here is a list of the most common spellings for the long and short vowel sounds:

Multiple Spellings of Vowels

short a

a (bat)
ai (plaid)

short e

a (any)
ae (aetna)
ai (said)
ay (says)
e (pet)
ea (feather)
ei (heifer)
eo (leopard)
ie (friend)
u (bury)

short i

a (senate)
ai (mountain)
ay (always)
e (pretty)
ea (guinea)
ee (been)
ei (forfeit)
eo (pigeon)
ey (money)
i (sit)
ia (carriage)
ie (sieve)
o (women)
u (busy)
ui (build)
y (hymnal)

short o

a (was)
o (not)
ou (hough)

short u

ion (nation)
o (come)
oe (does)
oo (blood)
ou (double)
u (sun)
wo (twopence)

long a

a (lake)
ai (pain)
au (gauge)
ay (day)
ea (break)
ei ((veil)
ey (obey)
eigh (weight)
a+e (safe)

long e

ae (Caesar)
ay (quay)
e (be)
ea (beam)
ee (feet)
ei (deceive)
eo (people)
ey (key)
i (machine)
ie (field)
oe (phoebe)
e-e (these)

long i

ai (aisle)
ay (aye)
ei (height)
ey (eye)
i (ice)
ie (vie)
igh (high)
oi (choir)
uy (buy)
y (sky)
ye (rye)
i-e (pine)
y-e (type)

long o

au (hautboy)
e (sew)
eau (beau)
eo (yeoman)
o (old)
oa (roam)
oe (foe)
oh (oh)
oo (brooch)
ou (shoulder)
ou (soul)
ow (grow)
o+e (home)

long u

eau (beauty)
eu (feud)
ew (few)
ewe (ewe)
ieu (lieu)
ou (you)
queue (queue)
u (use)
ue (cue)
ui (suit)
u-e (mule)

ä

a (far)
ea (hearth)
e (sergeant)
oi (memoir)

e(ə)

a (care)
e (there)
ea (bear)
ai (chair)
ay (prayer)
ei (heir)
e'er (e'er)

i(ə)

e (here)
ea (fear)
ei (weird)
ee (deer)
ie (bier)
i (fakir)

ær

e (ever)
a (liar)
i (elixir)
o (actor)
u (augur)
ou (glamour)
y (zephyr)

o

o (off)
ou (cough)

o

o (orb)
a (all)
au (caught)
aw (awe)
ah (Utah)
as (Arkansas)
oa (board)
ou (court)
oi (memoir)

ou

ou (out)
ow (cow)
ough (slough)

oi

oi (boil)
oy (oyster)

ə

u (urn)
e (fern)
i (bird)
o (work)
ea (heard)
ou (journal)
y (myrrh)
eu (jeu)
o (können)

ü

oo

oo (foot)
o (wolf)
ou (should)
u (pull)

ü

oo

oo (food)
ew (brew)
o (ado)
wo (two)
oe (canoe)
eu (maneuver)
ue (blue)
u (endure)
ou (group)
ui (fruit)
u-e (rule)

APPENDIX II

TWO-SYLLABLE WORDS ILLUSTRATING PHONIC SKILLS

*Two-Syllable Words Illustrating the
Beginning and End Consonant Blends*

abbess	clinic	endless	intact	restless	stopgap
abduct	clipping	enlist	intend	rostrum	stuffing
abrupt	closet	entrap	intent	sampling	suspect
absent	collect	figment	invent	sandbag	suspend
acting	command	filling	invest	scalpel	swelling
adapt	commend	flagstaff	itself	scallop	swimming
addict	comment	flannel	justness	scandal	swindling
address	compact	flatcar	killing	scanner	switchboard
adduct	compress	fretful	kindred	scanty	switchman
adept	conduct	fulcrum	kinsman	scapegoat	tactful
adopt	confess	fungus	lament	scarcely	talent
adrift	conflict	garland	lasting	scarecrow	tactless
adult	congress	gastric	lefthand	scatter	tantrum
advent	connect	gladness	leftist	sceptic	tempting
affect	consent	glisten	listless	scolding	tenant
alarm	consist	gravel	Madrid	scornful	torrent
amass	constant	handbag	misspell	scotsman	torrid
amend	construct	handcuff	mustang	scottish	traffic
anthill	contact	handful	neglect	scoundrel	transcribe
arctic	contend	harmful	nostril	scraper	transect
ardent	content	harmless	nostrum	sculpture	transgress
armful	contest	helpful	object	scurry	transmit
arming	contract	helping	obsess	scurvy	transplant
armpit	contrast	helpless	offend	schedule	trappist
artful	convent	himself	oppress	schema	travel
artist	convict	hundred	parting	scholar	trellis
aspect	corrupt	hunting	patent	schooling	trespass
assent	dentist	husband	pedant	schooner	triplet
assess	disband	impart	pending	segment	tropic
asset	discard	implant	pilgrim	settling	trumpet
attend	direct	impress	placard	smallness	unarm
attest	disgust	imprint	plastic	solvent	unbend
attract	dispend	indent	plated	spartan	unblest
babbling	disrupt	induct	plating	spastic	undress
badlands	dissent	indult	pregnant	spectrum	unharmful
baldness	distant	indwell	present	spelling	unjust
ballast	distinct	inept	pressing	spinning	unrest
bandstand	distract	infant	problem	spital	unsnap
banging	district	infect	product	spotless	upend
bangup	distrust	infest	profit	spotted	upheld
Baptist	draftsman	inflict	progress	stagnant	uplift
bobsled	dragnet	inject	prospect	standing	uphill
bonded	drama	inland	pumpkin	standstill	upstart
briskling	dressing	insect	rambling	static	upswing
bullfrog	enact	insist	rampant	stigma	wettest
clement	encamp	inspect	rattling	stillness	winded
cleric	emblem	instill	restful	stockyard	windmill
clevis	ending	insult	resting	stolid	windfall

Two-Syllable Words Illustrating the K & Qu Sounds

K					
akin	hassock	kinsman	potluck	spoken	weekday
backstop	heckle	kitten	prickly	spunky	weekly
backup	homelike	kitty	provoke	stick-up	weeping
balky	homesick	Kodak	racket	sticky	wicked
baking	inkstand	lanky	rackle	stinking	winking
bankful	inkwell	lipstick	rebuke	stockpile	
bankrupt	intake	locket	reckless	stuckup	Q-Kw
barrack	invoke	lockup	remark	swanky	
basket	jackal	lucky	restock	sunstruck	acquit
becon	jackass	makeup	rickets	sunken	banquet
blacken	jacket	market	risky	tackle	conquer
blanket	jockey	markup	rocket	ticket	conquest
bracket	lampblack	monkey	rocky	ticking	frequent
bucket	keepsake	musket	silken	tinkle	inquest
casket	kennel	muskrat	silky	token	inquire
cockpit	Kenny	napkin	skeptic	trademark	liquid
cracking	kettle	necktie	skillful	trinket	misquote
darken	keyboard	numskull	skillet	trickle	quicken
darkness	keyhole	o'clock	skimming	tricky	quinine
embark	keynote	packet	skinny	twinkle	quintile
fullback	kidnap	pancake	skylark	unlike	quisling
frisky	kidney	peacock	skylight	unpack	quorum
freckle	kindle	picket	slapstick	waken	request
frankly	kindling	picking	socket	weakness	require
frankness	kindly	pickle	sneaky	weaken	sequel
flapjack	kindness	planking	sparkle	weakling	tranquil
gasket	kindred	plucky	speaking	wisecrack	
	kingly	pocket	speckle	wedlock	
	kinky	postmark			

Two-Syllable Words Illustrating the Long Vowel Sounds

Long A					
able	fragrant	Satan	bebop	demon	meter
ably	gable	satrap	bedeck	depart	negate
baby	gravy	slavish	befit	depend	pean
bacon	hasten	staple	began	depict	pecan
basal	hasty	stapler	beget	depress	Peking
basic,	hatred	status	begin	desist	predate
basin	ladle	stable	begot	detect	predict
basis	lady	scaly	begun	detest	prefect
blatant	naked	table	being	detract	pretend
cradle	nasal	taking	belong	emit	react
craving	native	tasteful	bequest	equal	rebel
data	navy	tasty	beyond	equip	rebuff
datum	papal	trader	deduct	erupt	recall
David	patron	trading	defect	hero	recant
flaming	rapist	traitor	defend	Jesus	recap
fracas	rating		defense	legal	refill
flaky	sacred	Long E	deflect	maybe	reflect
	sadism	acne	demand		refund

refuse	irate	<i>Long O</i>	omit	tonus	<i>O as ii</i>
regal	ivy	afford	oral	topmost	approve
regard	libel	ago	oval	'Tory	do
regress	lilac	banjo	passport	total	doing
regret	liking	bingo	patrol	totem	doer
reject	lining	broken	poem	transport	hairdo
rely	microbe	cargo	poet	Trojan	improve
remind	migrant	clover	polite	trophy	into
remit	migrate	cobra	polo	veto	lose
repel	mining	coed	pony	woven	loser
repent	minus	deport	portal		losing
replant	nitrate	enroll	portrait	<i>Long U</i>	move
reply	piling	florist	postal	fuel	movement
report	pilot	focus	postman	fury	movie
repress	primate	global	probate	humid	prove
reprint	riding	glory	profess	lurid	remove
resell	rifle	going	program	mural	two
resent	riot	golden	progress	music	twofold
reset	ripen	grotto	project	puny	twosome
resist	rival	hero	propel	pupil	twostep
respect	silent	holy	protect	sputum	undo
respell	silo	hostess	protest	stupid	who
respond	sinus	hotel	protract	student	whom
result	siren	import	report	tuba	whose
retard	stifle	impose	repose	tubing	womb
retell	spinal	inmost	robust	tulip	
retract	spiral	jumbo	rodent	tumult	<i>Long Y</i>
secret	spirant	Kodak	rolling	tunic	apply
secure	stipend	limbo	rosy	unit	comply
sedan	tidy	lingo	roving		defy
select	tiger	local	signpost	<i>U = ii</i>	deny
Swedish	tigress	locus	silo	hurrah	flying
	tiling	locust	sixfold	include	hydrant
<i>Long I</i>	timing	lotto	slogan	intrude	hygiene
bison	tiny	lotus	sloping	Judith	hyphen
biting	tiring	milepost	smolder	judo	imply
bridal	Titan	molest	sober	Judy	nylon
client	tithing	moment	sofa	junior	pigsty
climax	title	mores	soldier	plural	prying
crisis	triad	Moses	sportsman	Pluto	rely
diet	trial	mostly	sporty	prudence	reply
dinette	tribal	motel	stoic	prudent	spyglass
diving	trident	motif	stolen	prudish	stylist
finis	trifle	motive	story	ruble	stylus
filing	tripod	motto	stucco	rubric	supply
gliding	wiring	noble	swollen	ruby	typing
grimy	wiry	nobly	tempo	rural	typist
hiding		obese	tollbooth	ruthless	tyrant
idol		okay	tonal		

*Two-Syllable Words Having a Long
Middle Vowel and Ending in a Silent E*

A + E	lately	I + E	landslide	atone	seashore
affame	locate	abide	lifeless	backbone	toneless
arcade	mandate	admire	likely	before	transpose
awake	migrate	advise	likens	cajole	trombone
aware	mistake	afire	likeness	commode	
bareback	namely	alike	likewise	condone	U + E
barely	namesake	alpine	limestone	console	abuse
baseball	narrate	arise	lineman	demote	accuse
basement	negate	arrive	lively	denote	acute
became	nitrate	aside	meantime	deplore	allude
behave	octane	aspire	milepost	depose	allure
blameless	parade	backfire	milestone	devote	assume
blockade	placate	barbwire	nineteen	disclose	astute
brigade	plateful	beside	ninety	elope	capsule
butane	plate-glass	besides	offside	enclose	commune
careful	predate	bonfire	polite	erode	commute
careless	probate	clockwise	profile	evoke	compute
classmate	profane	collide	provide	flagpole	conclude
compare	prostrate	combine	recline	gallstone	confuse
comrade	regale	compile	refine	galore	consume
conclave	relate	comprise	repine	hailstone	costume
crankcase	resale	confide	retire	homeless	diffuse
create	restate	conspire	rewire	homelike	dilute
debate	retake	contrite	senile	homely	dispute
declare	rotate	contrive	spineless	homemade	disuse
dictate	safety	decline	spiteful	homesick	endure
donate	salesman	define	spitfire	hopeful	immune
engrave	sameness	demise	tapeline	hopeless	impure
erase	statesman	deprive	tideland	ignore	impute
escape	stagnate	desire	timecard	implore	infuse
estate	stalemate	despise	timeless	inclose	legume
evade	sulfate	divide	timely	invoke	mature
fanfare	sedate	divine	tireless	keyhole	minute
farewell	tapeline	empire	tiresome	keynote	misuse
filtrate	telltale	enquire	transpire	lonely	pollute
frustrate	tradesman	entire	umpire	lonesome	prelude
gamely	translate	esquire	unite	manhole	procure
grapevine	unsafe	finite	unlike	microbe	purely
grateful		firearm	unripe	milestone	refuse
homemade	E + E	firebug	widely	nosebleed	refute
inane	adhere	fireman	wideness	noteless	resume
inflamm	compete	firefly	windpipe	oppose	secure
inflate	complete	fireside	winesap	parole	tribune
inhale	concrete	grapevine	wireless	promote	tribute
inmate	convene	homelike		propose	unused
innate	delete	ignite	O + E	remote	useful
insane	gangrene	imbibe	abode	restore	useless
invade	impede	incline	adore	sandstone	
irate	stampede	inside	afore	stovepipe	Y + E
keepsake		inspire	alone	smokestack	retype
landscape		invite	arose	sunstroke	

*Two-Syllable Words Having a Long
First Vowel and a Silent Second Vowel*

AI	railway	saying	smeary	needy	rowboat
affair	rainbow	speedway	stealing	nineteen	soapsuds
afraid	raincoat	spillway	steamboat	nosebleed	soapy
ailment	raindrop	subway	spearmint	payee	steamboat
aircraft	rainfall	Sunday	seaman	redeem	scapegoat
airdrome	rainy	seaway	seamless	seedling	topcoat
airfield	reclaim	wayside	seashore	seemly	unload
airlift	refrain		seaway	teeming	uproar
airline	remain	EA	teacher	teepee	
airmail	repaint	beacon	teacup	teething	OE
airplane	retail	beaming	teammate	treetop	tiptoe
airport	retain	bearded	teamster	trustee	toein
airraid	sailing	beastly	teamwork	unseen	toenail
airship	saintly	beaten	teapot	upkeep	
airstrip	stainless	beneath	tearful	weedless	OO
airtight	sustain	cleanly	teaspoon	weeper	backdoor
armchair	unpaid	cleanness	treatment	weever	flooring
await	waistband	creamy	unclean	weevil	indoor
bailee	waistline	daydream	unseat		
bailiff	waiting	dealing	weakness	IE	OW
barmaid	waitress	decrease	weary	allied	aglow
blackmail		defeat	weasel	applied	arrow
bridesmaid	AY	disease		belie	bellow
complain	array	dreamland	EE	implied	bellows
complaint	astray	dreamy	agree	tie-up	below
contain	away	dreary	agreed	untie	bestow
declaim	betray	freaky	asleep	untried	blowing
despair	daytime	greasy	beefsteak		borrow
derail	daylight	hearing	beehive	OA	bowling
detail	defray	impeach	between	aboard	disown
detailed	delay	increase	breeding	abroad	follow
detain	display	leading	canteen	afloat	gallows
disclaim	essay	leafless	careen	approach	glowing
disdain	folkway	leaflet	career	bemoan	hollow
entrails	Friday	leaky	carefree	billboard	lowland
failing	gayness	leasing	coffee	boatman	lowly
failure	highway	meantime	decree	broadcast	mellow
faintly	layer	measles	degree	carload	minnow
fairly	layette	meaty	deepen	coating	narrow
fairness	layoff	misdeal	esteem	cocoa	owing
faithful	maybe	misdeed	flywheel	floating	pillow
faithless	mayor	mistreat	freely	foamy	rainbow
hailstone	midday	nearest	freewill	housecoat	rowboat
inlaid	Monday	oatmeal	freedom	iceboat	sallow
mainland	okay	peaceful	gleeful	inroad	snowball
mainly	payee	peanut	greedy	keyboard	snowblind
painful	payment	pleading	inbreed	loading	snowfall
painted	playful	pleasing	indeed	oatmeal	snowflake
pigtail	playmate	reading	keeping	potroast	snowy
plaintiff	playtime	real	keepsake	railroad	sorrow
portrait	railway	repeal	linseed	raincoat	sparrow
proclaim	relay	repeat	misdeed	reload	widow
railing	repay	reread	needle	reproach	willow
railroad	replay	retreat	needless	roaring	window

*Two-Syllable Words Illustrating the
v, x, y, and z Sounds*

V	valor	vestment	axon	extinct	Z
avail	value	veto	beeswax	extol	baptize
avid	vampire	vibrant	betwixt	extra	bazaar
bereave	vandal	vibrate	boxer	extract	bizarre
carving	Vandyke	vicar	complex	extreme	breezy
devil	vanguard	victim	convex	icebox	crazy
even	vanish	victor	exact (gz)	index	dazzle
event	vanquish	viewless	exalt (gz)	influx	dizzy
evil	vantage	viewpoint	exam (gz)	matrix	frenzy
gavel	vapid	vigil	exceed	maxim	enzyme
giver	varment	vigor	excel	mixer	fizzle
govern	varnish	vintage	except	oxcart	gazelle
graveyard	vary	vinyl	excess	prefix	gizzard
grave	vassal	virgin	exchange	pyrex	glazier
harvest	vastness	virile	excise	reflex	glazing
havoc	vaulted	virus	excite	saxon	grazing
lavish	vector	viscose	exclaim	toxic	grizzly
leaving	veiling	visit	exclude	waxy	guzzle
novel	vellum	vital	excuse		hazy
pelvic	velvet	vivid	exempt (gz)	Y	lazy
pelvis	venal	vocal	exhale	barnyard	Ozark
prevail	vender	vodka	exhaust (gz)	lawyer	plaza
prevent	vendor	voiceful	exhort (gz)	yachting	pretzel
preview	veneer	volley	exile	yammer	puzzle
revel	ventral	volume	exist (gz)	yankee	puzzling
revere	Venus	vomit	exit	yardage	zealous
revile	verbal	vortex	expand	yardman	zebra
revise	verdict	voucher	expansive	yardstick	zero
revoke	vermin	vouchsafe	expect	yearbook	zipper
revolt	version	vowel	expel	yearling	zither
rivet	versus	vulgar	expense	yearly	
vaccine	vertex	vulgate	expire	yeasty	
vagrant	very		explode	yellow	
valance	vesper	X as KS	expose	yeoman	
valet	vessel	affix	express	yiddish	
valid	vestal	axis	extend	yielding	
valley	vestige	axle	extent	yoked	

*Two-Syllable Words Illustrating the
ch, sh, th, wh, gh, and ph Sounds*

CH				
attach	cheapskate	childlike	choral (k)	chunky
backache (k)	checkbook	children	chortle	cockroach
beseech	checkmate	chilly	chorus (k)	detach
catcher	cheerful	chimney	chosen	discharge
catching	cheerly	chipmunk	Christen (k)	dispatch
chapel	cheery	chirrup	Christian (k)	etching
charcoal	chemist (k)	chitchat	Christmas (k)	franchise
chattel	cherish	chloride (k)	chronic (k)	enrich
cheapen	cherry	chopping	chuckle	godchild
	chicken	choppy	chummy	headache (k)

itchy
ketchup
kitchen
machine (sh)
orchard
orchid (k)
ostrich
parchment
Rachel
ranchman
sandwich
satchel
technic (k)
technique (k)

SH

afresh
ashamed
aslies
backlash
banish
bashful
bishop
blemish
bushel
bushy
camshaft
clavish
codfish
dashboard
dishrag
freshman
freshness
English
famish
fishing
fishy
flashlight
flashy
flagship
finish
gunshot
hardship
impish
Irish

lavish
marshal
marshy
midship
parish
pettish
piggish
polish
refresh
relish
reshape
rubbish
selfish
shabby
shackle
shadow
shady
shakedown
shaking
shaky
shallow
shamble
shameful
shameless
shampoo
shamrock
Shanghai
shanty
shapeless
shapely
sharpen
sharper
sharpness
shatter
shaving
shebang
sheepish
sheepskin
sheeting
shellac
shelter
shelving
shepherd
sherbet
sheriff

sherry
shiftless
shifty
shilling
shimmer
shiner
shingle
shining
shiny
shipment
shipmate
shipshape
shipwreck
shipyard
shirker
shiver
shoddy
shoeblack
shoehorn
sluggish
snapshot
Spanish
windshield

TH

athlete
bequeath
betroth
breathing
breathless
clothing
deathbed
deathly
dishcloth
ethic
ethnic
filthy
gather
Gothic
lengthen
lengthy
Martha
plaything
Sabbath
thankful

thankless
theism
theist
themselves
thereby
therefore
therein
thermal
thesis
thicken
thicket
thievish
thimble
thinking
thirsty
thirteen
thirty
thistle
thither
thorax
thorny
thoughtful
thoughtless
thrashing
threaten
threefold
threescore
thresher
threshold
throttle
throughout
thunder
Thursday
thyself

WH

awhile
elsewhere
meanwhile
whaler
whaling
wheedle
whereas
whereat
wherefore

wherein
whether
whimper
whipping
whirlpool
whisker
whiskey
whiten
whiteness
whittler
whiting
whitish
whittle

PH

asphalt
blaspheme
digraph
gopher
graphic
hyphen
nephew
orphan
phantom
pheasant
phoneme
phoney
phonic
phony
Phyllis
physique
prophet
rephrase
siphon
sophist
triumph
trophy

GH

aghost
ghastly
ghostly

The Soft Sounds of C and G

C					
absence	concede	icehouse	recite	discharge	impinge
accede	conceit	iceman	replace	divulge	indulge
accent	conceive	iceplant	retrace	frigid	infringe
accept	consent	icing	stencil	engage	ingest
access	decease	icy	tacit	engaged	judge
acid	deceased	incite	tracing	enlarge	judgment
advice	deceit	lacing		enrage	language
airforce	deceive	lucid	G	gadget	legend
allspice	decent	mercy	aged	gender	legion
cancel	decide	parcel	agent	genius	luggage
cement	decile	precede	allege	gentle	manager
censure	deduce	precept	arrange	gentry	misjudge
census	deice	princely	avenge	genus	pudgy
central	denounce	princess	begrudge	gerund	pungent
cigar	device	proceed	besiege	gesture	ranger
citrus	fancy	process	budget	giant	rechange
city	embrace	produce	cartridge	giblet	refuge
civics	graceful	province	challenge	ginger	regent
civil	iceberg	recede	cogent	giraffe	regime
commence	iceboat	receive	deluge	gypsy	
conceal	icebox	recept	digit	hygiene	
	icecream	recess	digest	immerge	

Two-Syllable Words in Which S is Pronounced as Z

abuse	chisel	enclose	menses	preside	soapsuds
accuse	clockwise	gallows	miser	propose	sometimes
advise	closet	grisly	mores	quisling	thousand
arise	demise	impose	monism	raisin	Thursday
arose	depose	inclose	Moses	reason	tradesman
badlands	desert	infuse	nosebleed	refuse	transpose
beeswax	deserve	ism	nudism	repose	unused
bellows	desire	Jesus	oppose	resent	visit
baptism	desist	Joseph	phantasm	resist	weasel
besides	despise	kinsfolk	pheasant	result	wisecrack
bridesmaid	disclose	leasing	physics	resume	
cheesecloth	disease	likewise	pleasing	rosy	

Two-Syllable Words Illustrating the Three-Letter Consonant Blends: Scr, Shr, Spl, Squ, Str, and Thr

Scr	Shr	Spr	Str		Thr
inscribe	shriner	sprayer	abstract	stratum	dethrone
prescribe	shrinkage	spreader	constraint	streaky	thrasher
proscribe	shrivel	springtime	construct	streamer	threaten
scrabble	shrubby	sprinkle	instruct	street car	threefold
scramble			obstruct	strengthen	threshold
scrappy	Spl	Squ	straddle	stretcher	thrifty
scratcher	splashy	squabble	straight	striate	throaty
scratchy	splendid	squadron	straighten	stringy	throttle
scrawny	splendor	squander	strainer	stroller	
scribble	splinter	squirrel	stranger	strongly	
scrimmage			strangle	struggle	
scripture			strata	strutter	

*Two-Syllable Words with Long Vowels in the
Medial Position Between Two Consonants*

<i>Long I</i>	limelight	hindsight	(imb)	<i>The ô sound of O</i>	
(igh)	mighty	kindless	climber	(of-off-og-oth-	
brighten	mightily	kindly	climbing	oss-ost-ong-of-	
bullfight	nightmare	kindness	<i>Long O</i>	oft-ough)	
daylight	nighttime	mankind		across	lofty
delight	rightful	mindful	(old)	aloft	often
flighty	rightly	mindless	behold	along	prologue
frighten	rightness	remind	billfold	belong	toffee
gaslight	spotlight		blindfold	coffin	tossup
highness	stoplight	(ild)	holding	costly	upmost
highway	tightrope	mildness	tenfold	defrost	utmost
hindsight	twilight	wildcat	unfold	doggie	watchdog
insight	(ind)	wildfire	unsold	dogma	wrongly
midnight	behind	wildness	uphold	frosty	
lighting	binding	wildly	(oll)	frosting	
lightly	blindfold	(int)	tollgate	frostbite	
lightness	finding	pint	unroll	glossy	
lightning				kickoff	

The Effect of R on Previous Vowel

<i>ar = ər</i>	onward	amber	camper	cracker	fluster
afterward	orchard	badger	cancer	creamer	flutter
altar	oscar	bailer	canter	desert	flyer
awkward	pedlar	baker	censor	differ	fodder
beggar	popular	banker	center	digger	folder
billiard	scholar	banner	chamber	diner	freezer
blizzard	solar	banter	chapter	dimmer	freighter
briar	steward	barber	charger	dinner	further
bulwark	southward	barter	charter	dipper	fuller
buzzard	Spaniard	batter	chatter	dodger	gambler
burglar	standard	beaker	checker	doer	gander
Caesar	upwards	bearer	chipper	dresser	gender
cellar	wayward	beaver	chopper	ember	gerund
collar	westward	better	cider	enter	ginger
dollar		bigger	cinder	Esther	giver
forward	<i>ar = or</i>	bitter	cistern	ether	glimmer
friar	award	bladder	clamber	ever	glitter
gizzard	lukewarm	blisters	clatter	faker	gobbler
grammar	quarrel	blotter	cleaner	farmer	gopher
hangar	quarter	boarder	clearer	farther	govern
Howard	quartet	blunder	cleaver	fisher	gunner
inward	quartzite	bowler	cleric	filter	gutter
inwards	reward	broiler	clever	finder	hammer
laggard	warship	broker	clinch	finger	hanger
leopard	water	brother	cluster	flatter	heater
liar		bubbler	clutter	flicker	herself
medlar	<i>er = ər</i>	buffer	cobbler	flier	Homer
molar	adder	butler	copper	flitter	Hubert
nectar	after	butter	cover	floater	hunter
niggard	alter				

hurdler	leather	number	pervade	popper	rocker
infer	lectern	order	pervert	primer	roster
jester	lower	pamper	pester	proper	rover
jigger	maker	panther	picker	prosper	rubber
juggler	manger	paper	pilfer	putter	rudder
jumper	marker	partner	planner	Quaker	runner
Kaiser	master	passer	planter	quitter	saber
keeper	matter	patter	plaster	raider	setter
killer	member	pattern	platter	rancher	settler
lacquer	millar	peeler	player	rather	signer
ladder	miner	pepper	plier	rattler	
lantern	mister	perhaps	plotter	render	
lather	monster	permit	plunder	rider	
laughter	mower	persist	plunger	roadster	
lawyer	neither	perspire	poker	roaster	
layer	nether	persuade	ponder	robber	

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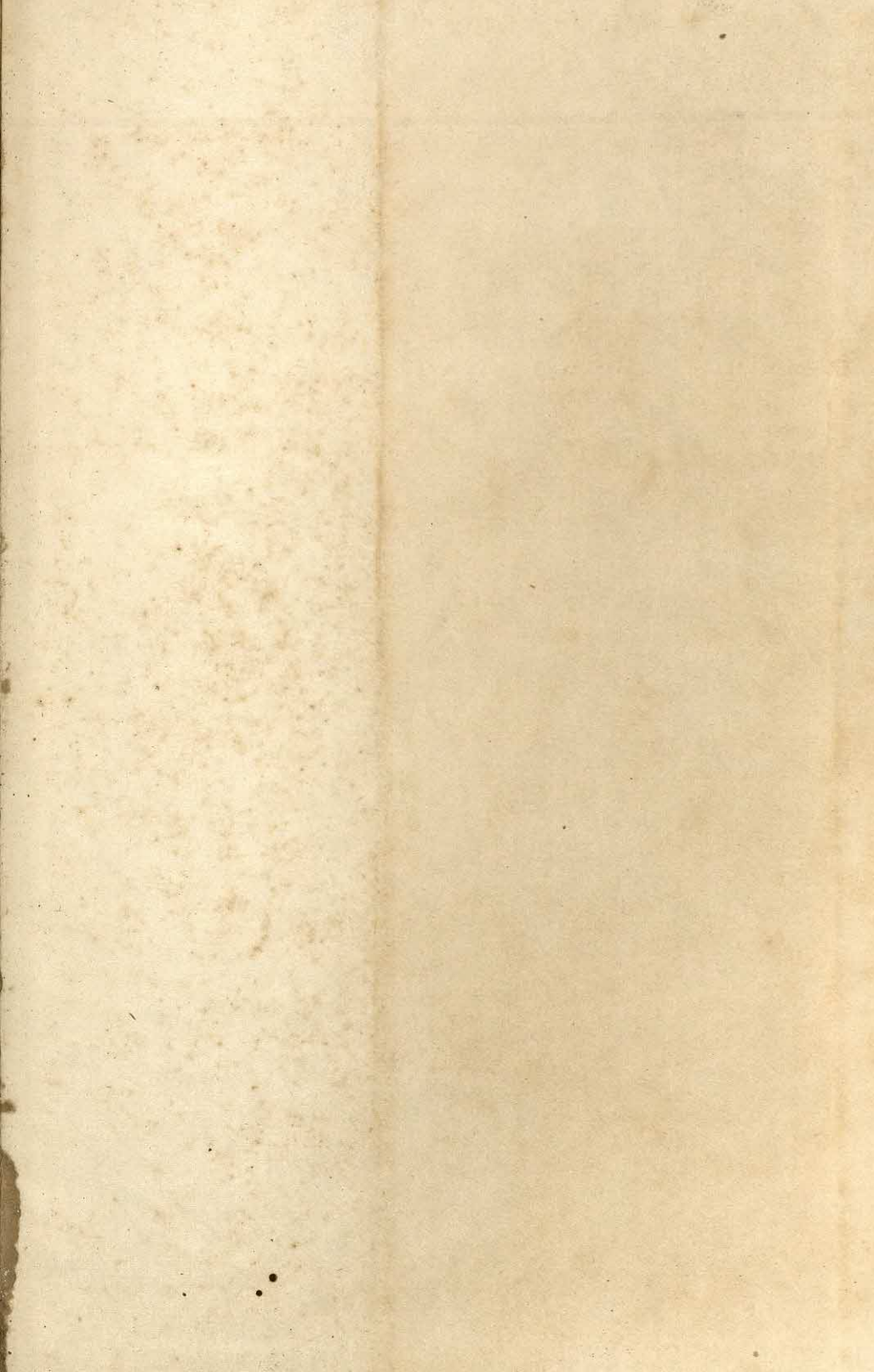
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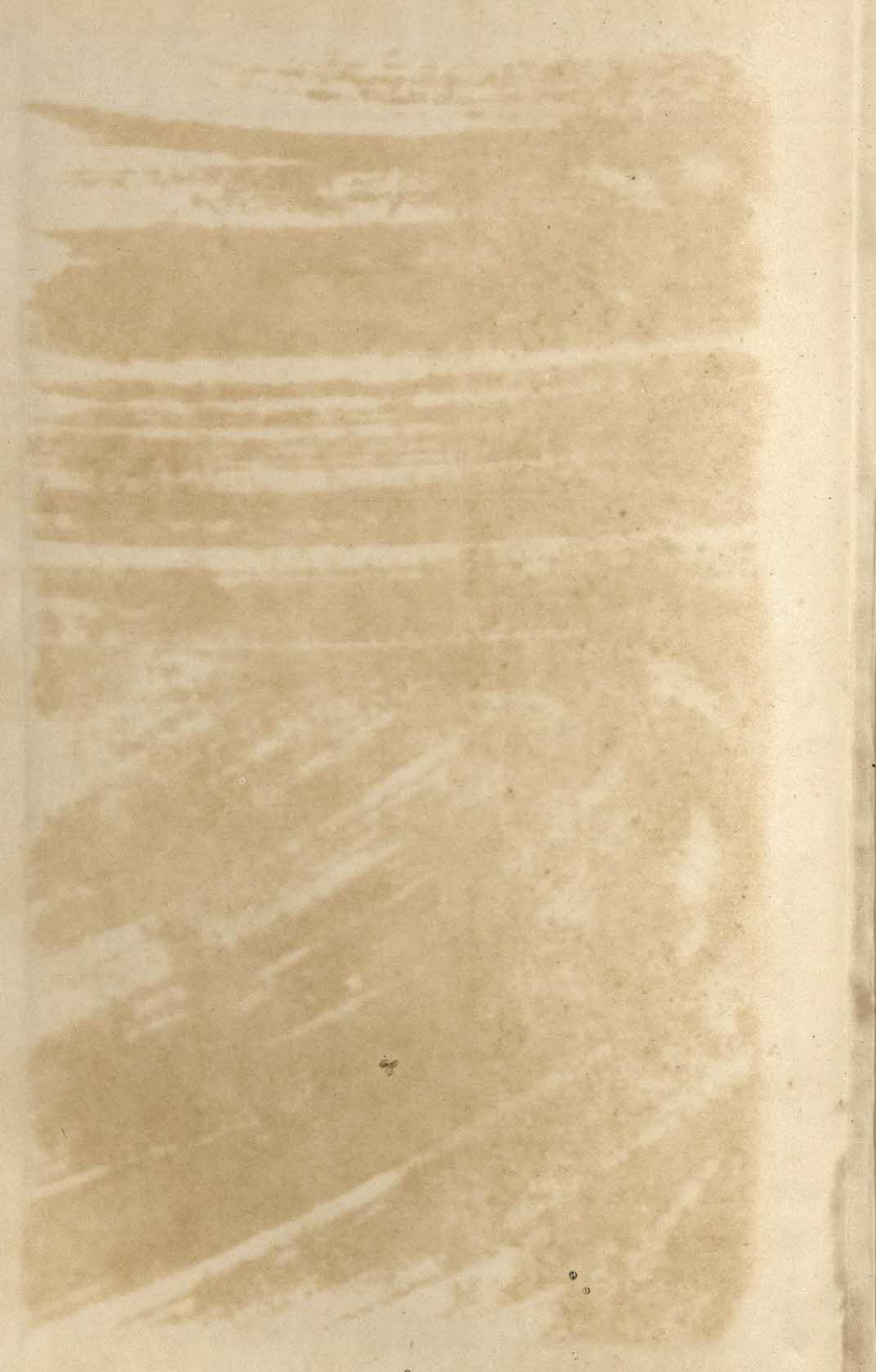
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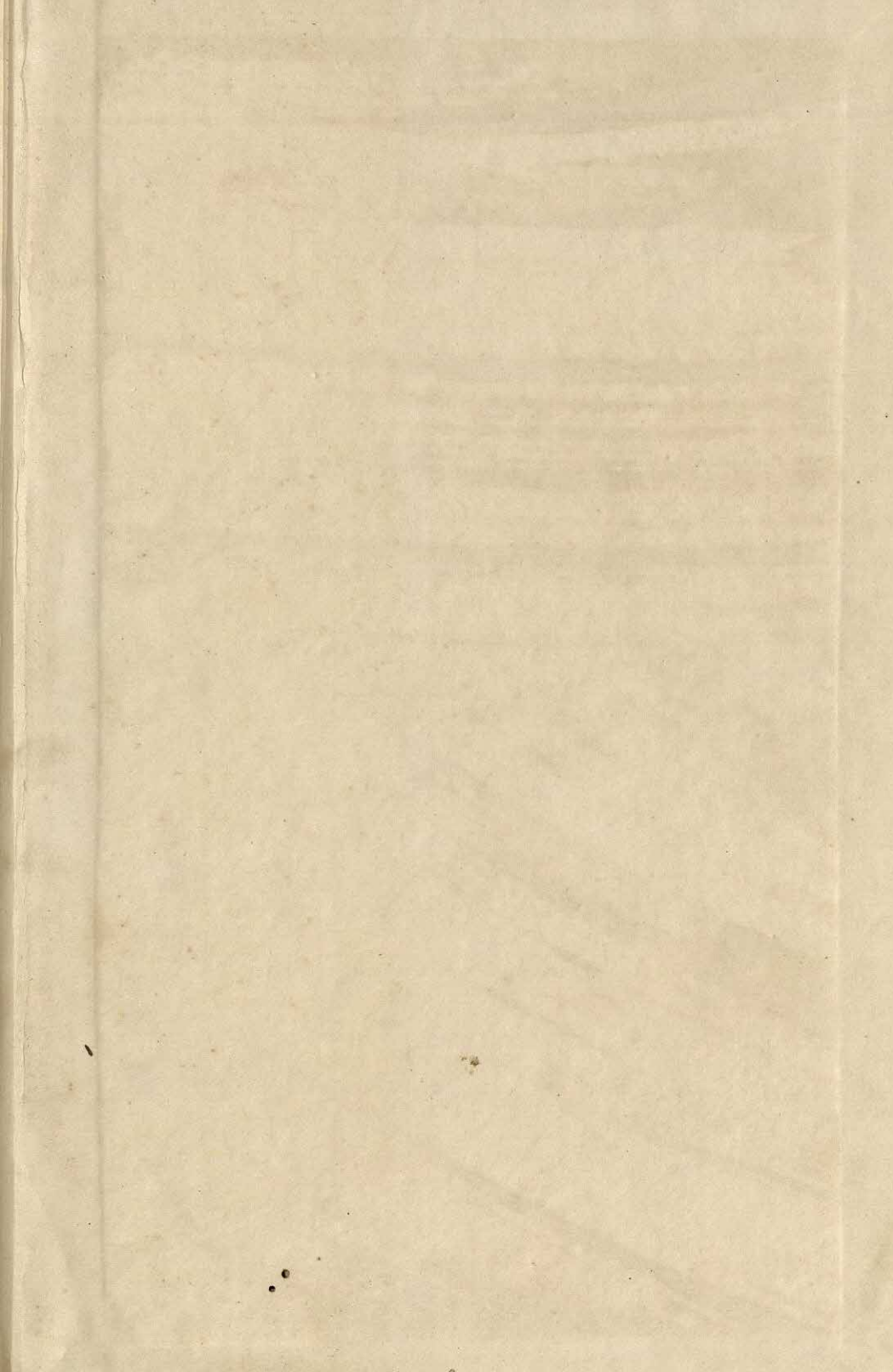
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